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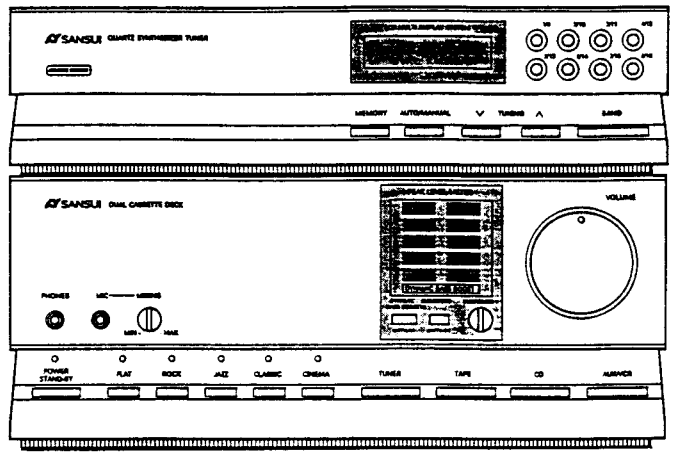
SANSUI

SERVICE MANUAL



MC-1000
MC-1000L

MICRO COMPONENT SYSTEM
<TUNER & AMPLIFIER Section>

CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

NOTICE

1. The symbols UL, CSA, UK, EG, IPT, EU, SS and XX <EXPORT> on the parts list and the schematic diagram mean followings respectively.
   - UL..... Manufactured for U.S.A. market. (Underwriters Laboratories approved model.)
   - CSA..... Manufactured for Canadian market.
   - UK..... Manufactured for United Kingdom market.
   - EG..... Manufactured for F.R. Germany market.
   - IPT..... Manufactured for Italian market.
   - EU..... Manufactured for European market.
   - SS..... Manufactured for Saudi Arabian market.
   - XX..... Standard Version. <EXPORT>
   - NON MARK..... Common Parts.
2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.
4. Abbreviations in this service manual are as follows.

Abbreviations List

N.I.R.	: Non-Inflammable Resistor	S.V.R.	: Semi Variable Resistor
C.C.	: Ceramic Capacitor	SW.	: Switch
E.C.	: Electrolytic Capacitor	E.B.	: Bi-Polar Electrolytic Capacitor
V.R.	: Variable Resistor		

Specifications

(MC-1000/1000L)

Power output (Front channel)
Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.9% total harmonic distortion.
20 watts per channel into 8 ohms.
Load impedance.....8 to 16 ohms
Signal to noise ratio (Over all, 0 dB=1 watt, A-network)
TAPE, CD, AUX/VCR ..... 85 dB
Controls
DYNAMIC BASS BOOST (VOLUME: –30dB position)
..... +9 dB at 50 Hz

FM Section
Tuning range.....87.9 to 107.9 MHz
Usable sensitivity
Mono .....13.2 dBf (4.0 µV/IHF T-100)
50 dB quieting sensitivity
Mono.....18 dBf
Stereo.....40 dBf
Signal to noise ratio at 65 dBf
Mono.....76 dB
Stereo.....70 dB
Stereo separation.....40 dB at 1,000 Hz
Frequency response .....30 to 15,000 Hz +1 dB, –3 dB

AM Section
Tuning range.....530 to 1,600 kHz
Usable sensitivity.....55 dB/m (562 µV/m)
Signal to noise ratio.....40 dB (antenna input 80 dB/m)

LW Section (MC-1000L)
Tuning range.....53 to 281 kHz
Usable sensitivity.....63 dB/m (1412 µV/m)

Others
Power requirements. ..... 120 V/220 V/240 V 50/60 Hz
For U.S.A. and Canada ..... 120 V (60 Hz)
Power consumption ..... 85 watts (max 110 VA)
Dimensions.....280 mm (11-1/16") W
185 mm (7-5/16") H
282 mm (11-1/8") D
Weight.....5.5 kg (12.1 lbs) net

* **Design and specifications subject to changes without notice for improvements.**
* **Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.**

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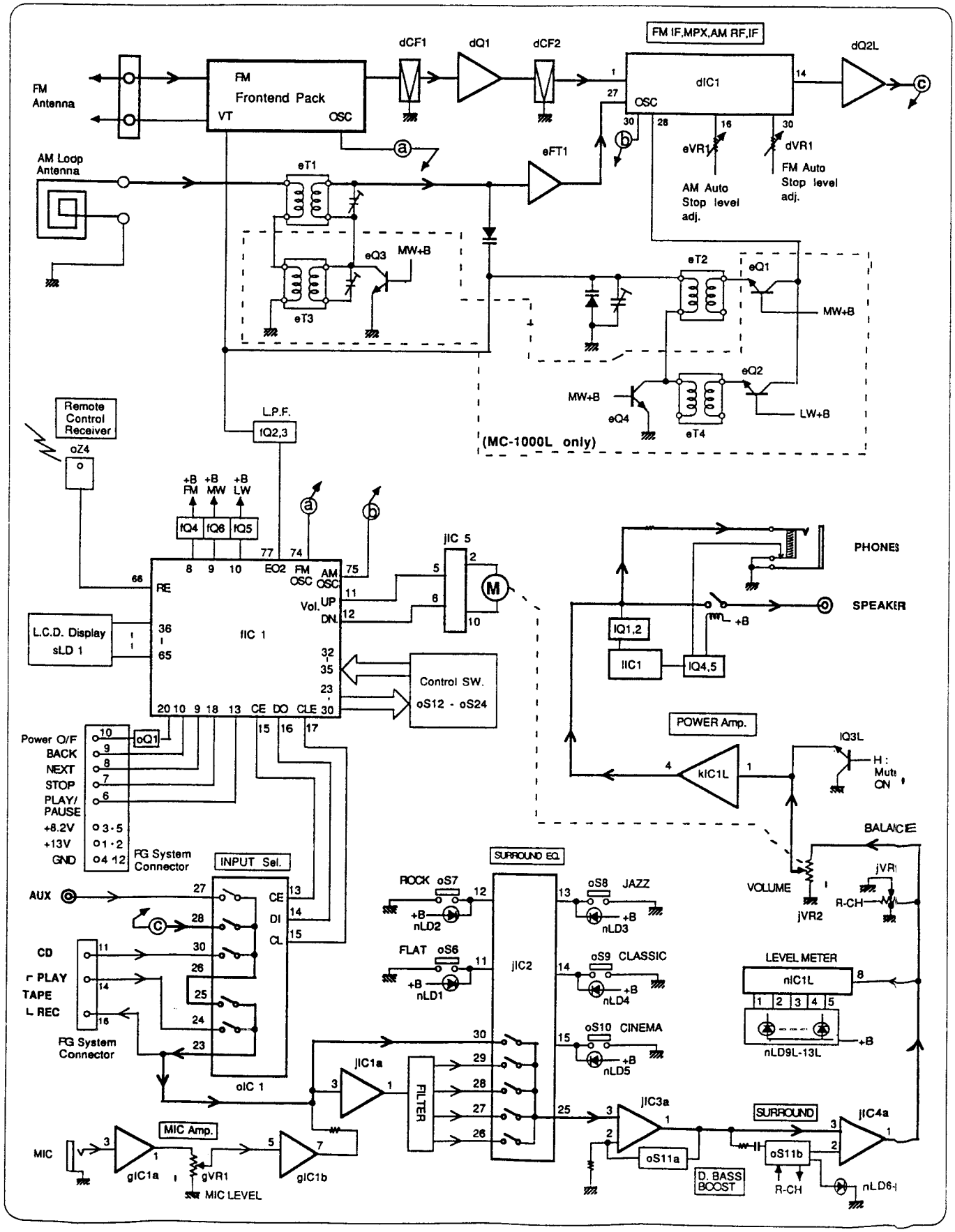
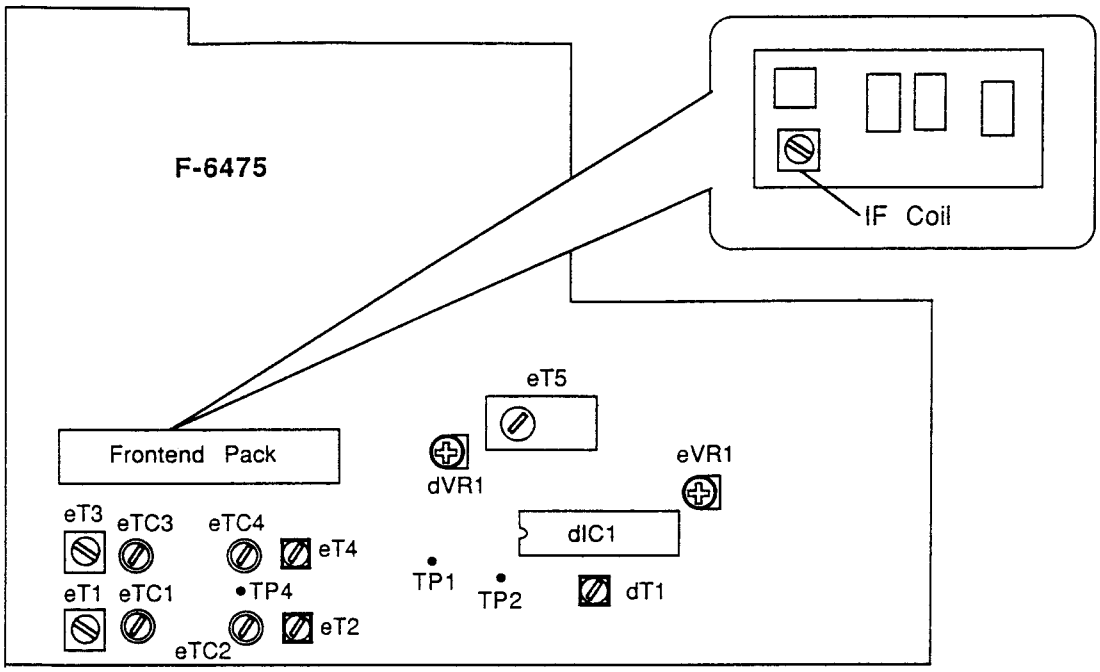
1. BLOCK DIAGRAM



2. ADJUSTMENTS

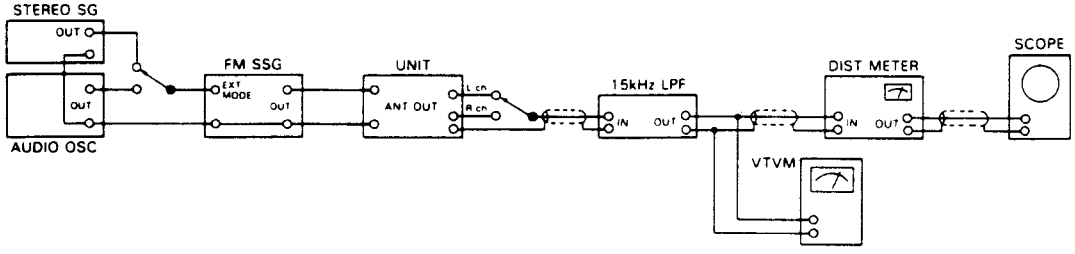
Fig. 2-1. Adjustment Points of F-6475



2-1. FM Adjustment (See Fig. 2-1 Adjustment Points of F-6475)

Note: 1. BAND Switch..... FM
2. AUTO/MANUAL Swith.....MANUAL (Steps 1, 2) ; AUTO (Step 3)
3. Connect as shown Fig. 2-2.
4. VOLUME..... Cencer

Fig. 2-2



STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	Discriminator Coil Adj.	No Input.	——	Between TP1 & TP2, (Across the dR9, F-6475) DC Volt Meter.	dT1 (F-6475)	DC 0V ± 30mV	
2.	Auto Stop Level Adj.	98MHz ANT Input, 22dBf (16.8dB), 1kHz (100% MOD.), FM SSG.	FM ANT Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	98.00MHz	
				Output L or R ch, VTVM & Oscilloscope.	dVR1 (F-6475)	Output signal comes out.	
3.	Distortion Adj.	98MHz ANT Input, 65dBf (59.8dB.), FM SSG, Pilot 19kHz (9% MOD), L-R MODE 1kHz + Pilot (100% MOD.) STEREO SG.	FM ANT Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	98.00MHz	
				Output L or R ch, VTVM & Oscilloscope.	IF Coil	Min.THD	

◆ NOTICE FOR FM ADJUSTMENT

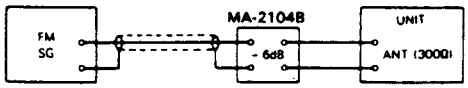
There are two kind in indication of FM SSG output attenuator.

1. Attenuator with marking of 75 Ω open ..... open indication type.
2. Attenuator with marking of 75 Ω load or close ..... load or close indication type.

FM SG output level in this FM adjustment are described as open indication type.

To feed FM signal, a dummy antenna circuit as Fig. 2-3 must be connected between FM SG output and ANT terminal (300Ω) of the unit.

Fig. 2-3



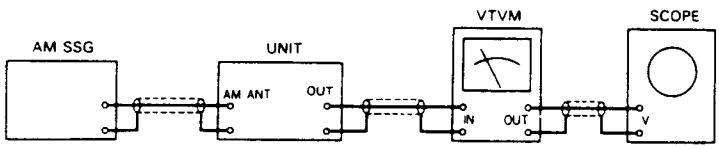
- The following table shows relations among FM SG attenuator indication (dB), available power ratio (dBf) and antenna terminal voltage (dB/μV) in each indication type.

	FM SG Attenuator Indication	Available Power Ratio	Antenna Terminal Voltage
Open indication type	0 dB 66 dB	-0.8 dBf 65.2 dBf	-6 dB/μV 60 dB/μV
Load or close indication type	0 dB 60 dB	5.2 dBf 65.2 dBf	0 dB/μV 60 dB/μV

2-2. AM (MW, LW) Adjustment (See Fig. 2-1. Adjustment Points of F-6475 on page 2)

Note: 1. BAND Switch..... AM (MC-1000),
BAND Switch..... MW (MC-1000L)
2. Connect AM loop antenna to AM antenna terminal.
3. Connect as shown Fig. 2-4.
4. VOLUME..... Center

Fig. 2-4



1) AM IF and MW (AM) Tuning Adjustment

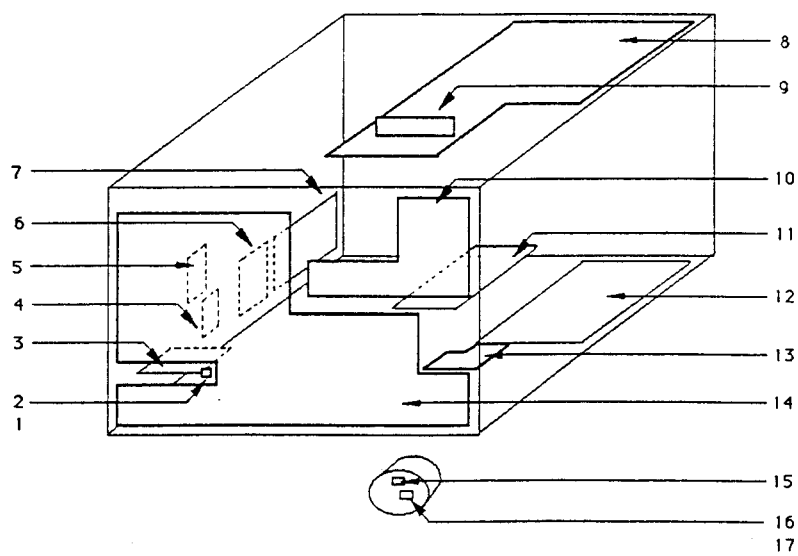
STEP	SUBJECT	FEED SIGNAL FROM	FEED SIGNAL TO	MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
1.	531kHz (or 530kHz) Tuning Voltage Adj.	No Input.	——	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	531kHz (or 530kHz)	• Repeat precedures as stated in STEP 1 and 2.
				Between TP4 (F-6475) and GND, DC Volt Meter.	eT2 (F-6475)	DC 1.0V ± 0.1V	
2.	1602kHz (or 1720kHz) Tuning Voltage Adj.	No Input.	——	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	1602kHz (or 1720kHz)	
				Between TP4 (F-6475) and GND, DC Volt Meter.	eTC2 (F-6475)	8.0V ± 0.1V	
3.	603kHz (or 600kHz) RF Adj.	603kHz (or 600kHz) ANT Input, 50dB, 400Hz (30% MOD.), AM SSG	AM ANT Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	603kHz (or 600kHz)	• Repeat precedures as stated in STEP 3 and 4.
				SP Output L or R ch, VTVM & Oscilloscope.	eT1 (F-6475)	Max. Output	
4.	1404kHz (or 1400kHz) RF Adj.	1404kHz (or 1400kHz) ANT Input, 50dB, 400Hz (30% MOD.), AM SSG	AM ANT Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∧) Switch	1404kHz (or 1400kHz)	
				SP Output L or R ch, VTVM & Oscilloscope.	eTC1 (F-6475)	Max. Output	
5.	IF Coil Adj.	999kHz (or 1000kHz) ANT Input, 50dB, 400Hz (30% MOD.), AM SSG	AM ANT Terminal	SP Output L or R ch, VTVM & Oscilloscope.	eT5 (F-6475)	Max. Output	
6.	Signal Indicator Level Adj.	999kHz (or 1000kHz) ANT Input, 55dB, 400Hz (30% MOD.), AM SSG	AM ANT Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	999kHz (or 1000kHz)	
				Signal Indicator (FL Display)	eVR1 (F-6475)	Make all signal indicators lighting up.	

2) LW Tuning Adjustment <MC-1000L only>

Note: 1. BAND Switch.....LW

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	153kHz Tuning Adj.	No Input.	——	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	153kHz	• Repeat precedures as stated in STEP 1 and 2.
				Between TP4 (F-6475) and GND, DC Volt Meter.	eT4 (F-6475)	DC 1.0V ± 0.1V	
2.	281kHz Tuning Adj.	No Input.	——	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	281kHz	
				Between TP4 (F-6475) and GND, DC Volt Meter.	eTC4 (F-6475)	5.4V ± 0.1V	
3.	170kHz RF Adj.	170kHz ANT Input, 60dB, 400Hz (30% MOD.), AM SSG.	ANTENNA Terminal	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	170kHz	•Repeat precedures as stated in STEP 3 and 4.
				SP Output L or R ch, VTVM & Oscilloscope.	eT3 (F-6475)	Max. Output	
4.	261kHz RF Adj.	261kHz ANT Input, 60dB, 400Hz (30% MOD.), AM SSG.	Same as above.	FL Display (Reception Frequency)	MANUAL TUNING, TUNING (∧, ∨) Switch	261kHz	
				SP Output L or R ch, VTVM & Oscilloscope.	eTC3 (F-6475)	Max. Output	

3. P.C. BOARD LOCATION



F-6475--- 8 F-6480---10 F-6485--- 7 F-6580---16

F-6476--- 5 F-6481--- 1 F-6486--- 4 F-6581---17

F-6477---13 F-6482--- 2 F-6487--- 9

F-6478---14 F-6483---11 F-6489--- 6

F-6479--- 3 F-6484---12 F-6499---15

4. PARTS LIST OF CIRCUIT BOARD

4-1. F-6475 Tuner Board

<Stock No. 01236301=XX, UL, CSA, SS>
<Stock No. 01236305=EU, UK>
<Stock No. 01236308=EG, IPT>

Parts No.		Stock No.	Description
dZ2		83229200	FM Pack (XX,UL,CSA,SS)
		83229100	FM Pack (EU,UK,EG,IPT)
• Transistor			
dQ1		46393201	2SC2786
dQ2		46367301	2SC2458
dQ3		48183400	DTA114YS
	or	49388600	RN1207
dQ4		48171600	DTC114YS
	or	49390800	RN2207
dQ5		46393201	2SC2786
dQ6		48223100	DTC114TS
	or	49389000	RN1211
• IC			
dIC1		49555900	LA1851N
dX01		83227400	Quartz Element
⚠ dR2		46228600	47Ω 1/2W N.I.R.
⚠ dR20		46228200	22Ω 1/2W N.I.R.
dC4		48426900	22000pF 25V C.C.
dC5		48426900	22000pF 25V C.C.
dC6		48426900	22000pF 25V C.C.
dC13		49429000	15000pF 16V C.C. (UL,CSA)
		49428900	0.012μF 16V C.C. (XX,SS)
		49428800	0.01μF 16V C.C. (EU,UK,EG,IPT)
dCF1,2		46202500	Ceramic Filter SFE 10.7MS2 (XX,UL,CSA,SS)
		48064800	Ceramic Filter SFF 10.7MS3G (EU,UK,EG,IPT)
dT1		83228000	FM IF Coil
dT51		83228600	Filter, adj-CH (EG)
dVR1		83216600	20kΩ S.V.R., FM Stop Level
dZ1		46547300	4P Terminal, Antenna (XX,UL,CSA)
		49320400	2P Terminal, Antenna (EU,UK,EG,IPT)
• Transistor			
eQ1,2		48223100	DTC114TS (EU,UK,EG,IPT)
	or	49389000	RN1211 (EU,UK,EG,IPT)
eQ3,4		46604301	2SC3327 (EU,UK,EG,IPT)
• FET			
eFT1		46393000	2SK192A-Y
	or	46393001	2SK192A-GR
eD1		46146300	Voltage V.C.Diode KV1236Z2
	or	46708400	Voltage V.C.Diode SVC321
eC1		48426900	22000pF 25V C.C.
eC2		48426900	22000pF 25V C.C.
eC3		48645500	100pF 50V C.C.
eC4		48426900	22000pF 25V C.C.
eC5		48662600	10pF 50V C.C.
eC6		48426900	22000pF 25V C.C.
eC9,10		49429600	4700pF 16V C.C. (EU,UK,EG,IPT)
eC11		48426900	22000pF 25V C.C.
eC14		48666000	6800pF 50V C.C.
eC15		48666200	0.01μF 50V C.C.
eTC1		46444600	30pF Trimmer C.
eTC2		46444600	30pF Trimmer C.
eTC3,4		46444600	30pF Trimmer C. (EU,UK,EG,IPT)
eT1		83228300	AM RF Coil
eT2		83228100	AM RF Coil
eT3		83228400	AM RF Coil (EU,UK,EG,IPT)
eT4		83228200	AM RF Coil (EU,UK,EG,IPT)
eT5		83227800	Ceramic Filter (XX,UL,CSA,SS)
		83227900	Ceramie Filter (EU,UK,EG,IPT)
eVR1		83216500	10kΩ S.V.R., AM Stop Level
• Transistor			
fQ1		48171600	DTC114YS (EU,UK,EG,IPT)
	or	49388600	RN1207 (EU,UK,EG,IPT)
fQ2		46367301	2SC2458
fQ3		46367301	2SC2458
fQ4		48183400	DTA114YS
	or	49390800	RN2207
fQ5		48183400	DTA114YS
	or	49390800	RN2207
fQ6		48183400	DTA114YS (EU,UK,EG,IPT)
	or	49390800	RN2207 (EU,UK,EG,IPT)
• IC			
fIC1		49555200	LC7230-8307
fX01		83269800	Quartz Element
• Diode			
fD1		46464100	1SS133
fD2		46464100	1SS133
fD3		46464100	1SS133
fD4		46464100	1SS133
fD5		03117600	1S2473T77
	or	46086000	1S1588TP-3
⚠ fR13		46229800	470Ω 1/2W N.I.R.
fC3		49427600	1000pF 16V C.C.
fC4		49427600	1000pF 16V C.C.
fC5		48717800	4.7μF 5.5V E.C.
fC6		49427600	1000pF 16V C.C.
fC8		48103500	2.2μF 50V E.B.
fC9		48103600	3.3μF 50V E.B.
fC10		49428800	10000pF 16V C.C.
• Transistor			
oQ1		48171600	DTC114YS
	or	49388600	RN1207
• IC			
oIC1		49362700	LC7821
• Diode			
oD1–7		46464100	1SS133
oD8		46464100	1SS133 (XX,EU,UK,EG,IPT,SS)
oD9		46464100	1SS133 (EU,UK,EG,IPT)
oD10		46464100	1SS133 (XX,UL,CSA,SS)
oD11–19		46464100	1SS133
oD20,21		03117600	1S2473T77
	or	46086000	1S1588TP-3
oZ1		83227600	Terminal Board, AUX
oZ2		49587300	FG Socket, System
sLD1		83228800	L.C. Display HLC9861-01-2210

4-7. F-6483 Power Amp. Board

<Stock No.01237101>

Parts No.		Stock No.	Description
• IC			
⚠ kIC1		49555100	SI-18752
⚠ kR4		46247700	4.7Ω 1W N.I.R.

4-8. F-6484 Power Supply Board

<Stock No.01237201>

Parts No.		Stock No.	Description
⚠ kR11		46248100	10Ω 1W N.I.R.
• Transistor			
IQ1		46367301	2SC2458
IQ2		46367201	2SA1048
IQ4		48183400	DTA114YS
	or	49390800	RN2207
IQ5		48171600	DTC114YS
	or	49388600	RN1207
• IC			
⚠ IIC1		46207600	TA7317P
• Diode			
ID1		03117600	1S2473T77
	or	46086000	1S1588TP-3
ID2		03117600	1S2473T77
	or	46086000	1S1588TP-3
ID3		83151300	1N4002
ID4		83151300	1N4002
ID5		03117700	10E-2
	or	83024700	1N4003
⚠ IR1		46905800	0.22Ω 3W N.I.R.
⚠ IR18		46229600	330Ω 1/2W N.I.R.
IC1		49429200	0.022μ F 16V C.C
IC5		48101500	100μ F 6.3V E.B.
IRL1		49587400	RELAY
	or	83228900	RELAY
• Transistor			
⚠ mQ1		48509401	2SD1761
⚠ mQ2		46367301	2SC2458
⚠ mQ3		48223100	DTC114TS
⚠	or	49389000	RN1211
⚠ mQ4		46367301	2SC2458
• Diode			
⚠ mD1		49482000	RBA-402
⚠	or	83002100	KBU4D
⚠ mD2		46273600	DBB10B
⚠	or	46273700	DBB10C
⚠	or	83020200	DF04M
⚠	or	83052000	DF02M
•Zener Diode			
mDZ1,2		46827400	RD12E-B1
	or	46827500	RD12E-B2
	or	49305400	05AZ12-X
	or	49305500	05AZ12-Y
mDZ3		46827800	RD13E-B2
	or	46827900	RD13E-B3
	or	49305800	05AZ13-Y
	or	49305900	05AZ13-Z

<F-6484>

Parts No.		Stock No.	Description
mDZ4		46825000	RD5.6E-B2
	or	46825100	RD5.6E-B3
	or	49303000	05AZ5.6-Y
	or	49303100	05AZ5.6-Z
⚠ mR1		46625000	390Ω 2W N.I.R.
⚠ mR2		46625100	470Ω 2W N.I.R.
⚠ mR4		46229000	100Ω 1/2W N.I.R.
mC1,2		49558300	4700μF 35V E.C
⚠ nR22		46227800	10Ω 1/2W N.I.R.
oZ3		46549200	4P Speaker Terminal

4-9. F-6485 Fuse Board

Parts No.	Stock No.	Description
⚠ pF1	83272700	Fuse, 1.5A (XX,SS)
⚠	83273000	Fuse, 3A (UL,CSA)
⚠	07184800	Fuse, 1.25A (EU,UK,EG,IPT)
⚠ pS1	49442310	Slide SW., Voltage Selector (XX,SS)

4-10. F-6486 Power Supply Sub-B Board

Parts No.	Stock No.	Description
⚠ mR9	46621100	0.22Ω 2W N.I.R.

4-11. F-6487 LCD Lamp Board

Parts No.	Stock No.	Description
nPL1	83226300	Pilot Lamp

4-12. F-6499 VOLUME Indicator Board

Parts No.	Stock No.	Description
• LED		
nLD15	83271300	LTL-709Y

4-2. F-6476 Power Supply Sub-A Board

Parts No.	Stock No.	Description
⚠ mR6	46621100	0.22Ω 2W N.I.R.
⚠ mR7	46621100	0.22Ω 2W N.I.R.
⚠ mR8	46621100	0.22Ω 2W N.I.R.

4-3. F-6477 MASTER VOLUME Board

Parts No.	Stock No.	Description
jC23	49430000	0.1µF 16V C.C.
jVR2	49373200	150kΩ V.R., MASTER V.R

4-4. F-6478 INPUT Selector & Control Amp. Board <Stock No.01236601>

Parts No.	Stock No.	Description
• IC		
jIC1	03607700	NJM4558D
or	07208900	NJM4558D
jIC2	49555300	LC7818
jIC3	03607700	NJM4558D
or	07208900	NJM4558D
jIC4	03607700	NJM4558D
or	07208900	NJM4558D
jIC5	48982600	LB1641
• Zener Diode		
jDZ1	48551700	MTZ4.7A
or	48551800	MTZ4.7B
jC4	48665400	2200pF 50V C.C.
jC5	48666100	8200pF 50V C.C.
jC6	48665300	1800pF 50V C.C.
jC7	48663700	820pF 50V C.C.
jC8	48665300	1800pF 50V C.C.
jC9	48426900	22000pF 25V C.C.
jC11	48665100	1200pF 50V C.C.
jC12	49429600	4700pF 16V C.C.
jC18	49429600	4700pF 16V C.C.
jC22	48666200	0.01µF 50V C.C.
jVR1	49363900	250kΩ (W) V.R., BALANCE
• Transistor		
IQ3	46367301	2SC2458
• Diode		
ID6–10	46464100	1SS133
IC9	48103400	1µF 50V E.B.
•Transistor		
nQ1	48229400	DTA114TS
or	49391200	RN2211
nQ2	48223100	DTC114TS
or	49389000	RN1211
nQ3	46367301	2SC2458
nQ4	46367301	2SC2458
• IC		
nIC1	46898100	BA6144
• Diode		
nD1	46464100	1SS133
nD2–4	03117600	1S2473T77
or	46086000	1S1588TP-3
• LED		
nLD1	48841200	SEL3910A, FLAT

<F-6478>

Parts No.	Stock No.	Description
nLD2	48841200	SEL3910A, ROCK
nLD3	48841200	SEL3910A, JAZZ
nLD4	48841200	SEL3910A, CLASSIC
nLD5	48841200	SEL3910A, CINEMA
nLD6	48849300	SEL3913K, ┐
nLD7	48849300	SEL3913K, ├BASS Boost
nLD8	48849300	SEL3913K, ┘
nLD9	48849300	SEL3913K, ┐
nLD10	48849300	SEL3913K, │
nLD11	48849300	SEL3913K, ├PEAK LEVEL
nLD12	48849300	SEL3913K, │ Meter
nLD13	48849300	SEL3913K, ┘
nLD14	48841100	SEL3210S, POWER
⚠ nR7	46623700	33Ω 2W N.I.R.
oZ4	49356200	Remote Receive Unit GP1U521X
oS1	48306900	Push SW., AUX
oS2	48306900	Push SW., TAPE
oS3	48306900	Push SW., CD
oS4	48306900	Push SW., TUNER
oS5	48306900	Push SW., POWER
oS6	48306900	Push SW., FLAT
oS7	48306900	Push SW., ROCK
oS8	48306900	Push SW., JAZZ
oS9	48306900	Push SW., CLASSIC
oS10	48306900	Push SW., CINEMA
oS11	83227200	Push SW., BASS Boost/ Surround

4-5. F-6479 Mic Amp. Board

<Stock No.01236701>

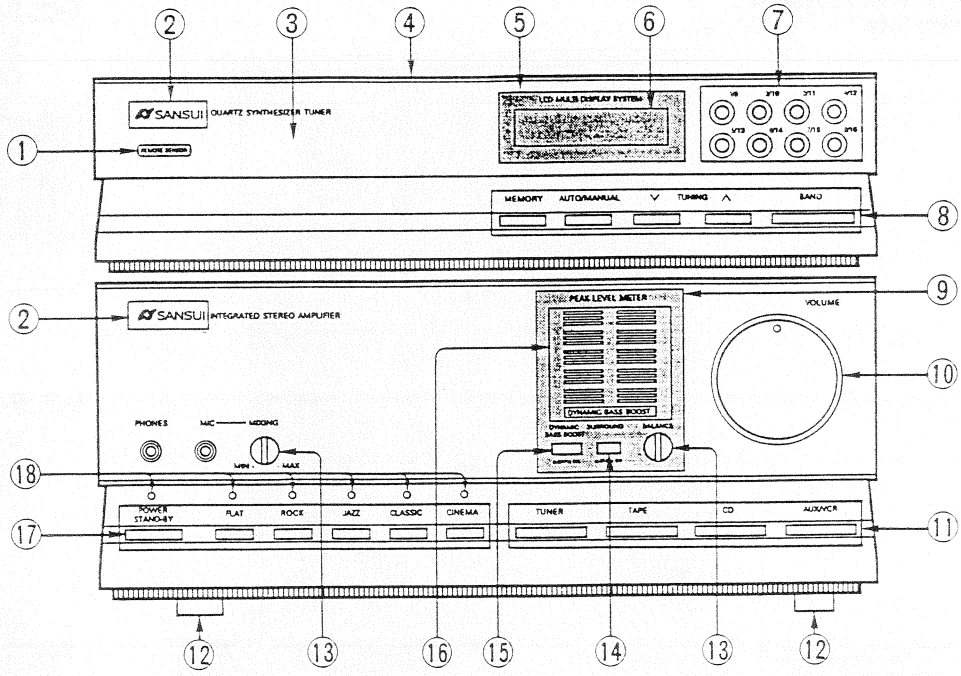
Parts No.	Stock No.	Description
• IC		
gIC1	03607700	NJM4558D
gVR1	83265800	20kΩ V.R., Mic Level
gJ1	49600500	Jack, Mic
⚠ kR12	46624700	220Ω 2W N.I.R.
kC13	48102600	22µF 25V E.B.
oJ1	49600600	Jack, PHONES

4-6. F-6480 Preset Switch Board

<Stock No.01236801>

Parts No.	Stock No.	Description
oS12	48306900	Push SW., Preset 4
oS13	48306900	Push SW., Preset 3
oS14	48306900	Push SW., Preset 2
oS15	48306900	Push SW., Preset 1
oS16	48306900	Push SW., Preset 8
oS17	48306900	Push SW., Preset 7
oS18	48306900	Push SW., Preset 6
oS19	48306900	Push SW., Preset 5
oS20	48306900	Push SW., UP
oS21	48306900	Push SW., DOWN
oS22	48306900	Push SW., AUTO/MA
oS23	48306900	Push SW., MEMORY
oS24	48306900	Push SW., BAND
oS26	46394000	SLIDE SW., 9K/10K

5. OTEHER PARTS



Parts List

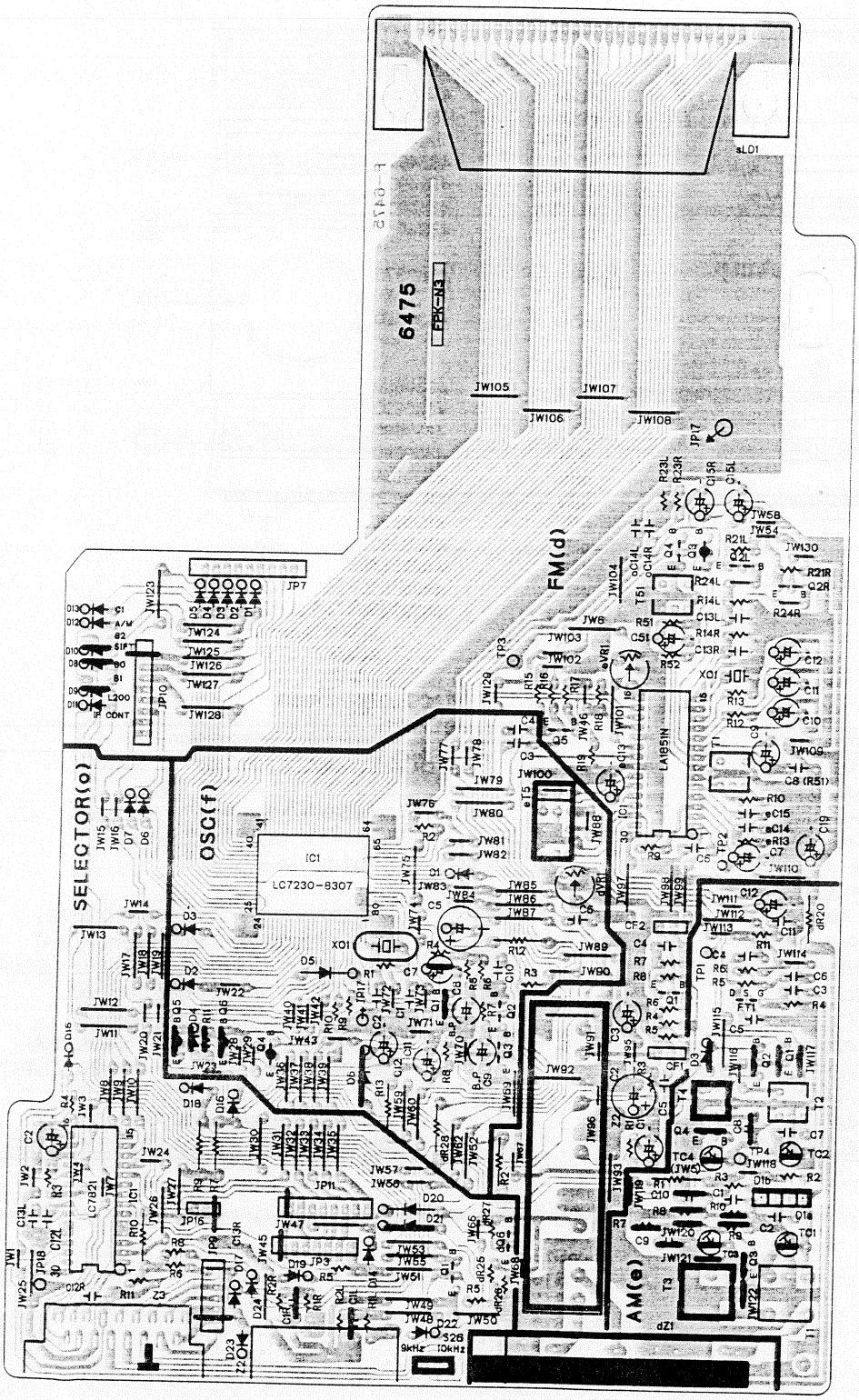
Parts No.	Stock No.	Description
1	84641800	RC Filter
2	85022000	Log type Badge
3	84641400	Front Panel(MC-1000)
	84645800	Front Panel(MC-1000L)
4	84640900	Bonnet
5	84640300	T. DS Plate
6	83271100	L.C.D. Filter
7	84640800	Knob,Preset 1-16
8	84641200	Knob,MEMORY,AUTO/MANUAL, TUNING,BAND
9	84640200	A. DS Plate
10	84640400	Knob,VOLUME
11	84641100	Knob,TUNER,TAPE,CD,AUX/VCR
12	84642500	Cushion for foot
13	84641500	Knob,BALANCE,MIC MIXING
14	84641700	Knob,SURROUND

Parts No.	Stock No.	Description
15	84641600	Knob,D. BASS BOOST
16	84642000	A. METER Panel
17	84641000	Knob,POWER,FLAT,ROCK,JAZZ, CLASSIC,CINEMA
18	84642100	Indicator
⚠	83229301	Power Transformer(XX,SS)
⚠	83229302	Power Transformer(UL,CSA)
⚠	83229305	Power Transformer(EU,UK,EG,IPT)
⚠	83003500	Power Supply Cord(XX)
⚠	83034900	Power Supply Cord(SS)
⚠	83003600	Power Supply Cord(UL,CSA)
⚠	83000600	Power Supply Cord(EU,EG,IPT)
⚠	83041600	Power Supply Cord(UK)
	49374300	Strain Relief(XX,UL,CSA)
	49374400	Strain Relief(SS,EU,UK,EG,IPT)

6. PARTS LOCATION ON CIRCUIT BOARD

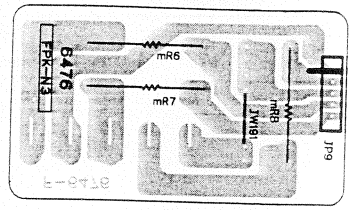
6-1. F-6475 Tuner Board

Component Side



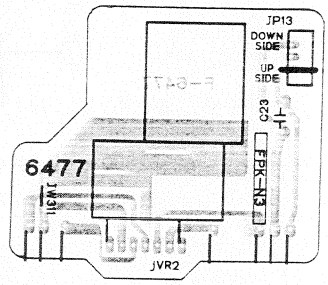
6-2. F-6476 Power Supply Sub-A Board

Component Side



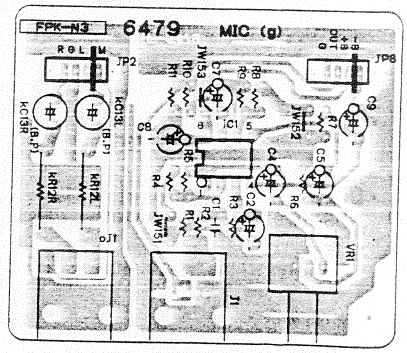
6-3. F-6477 MASTER VOLUME Board

Component Side



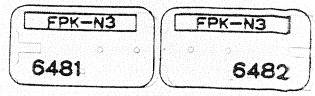
6-4. F-6479 Mic Amp. Board

Component Side



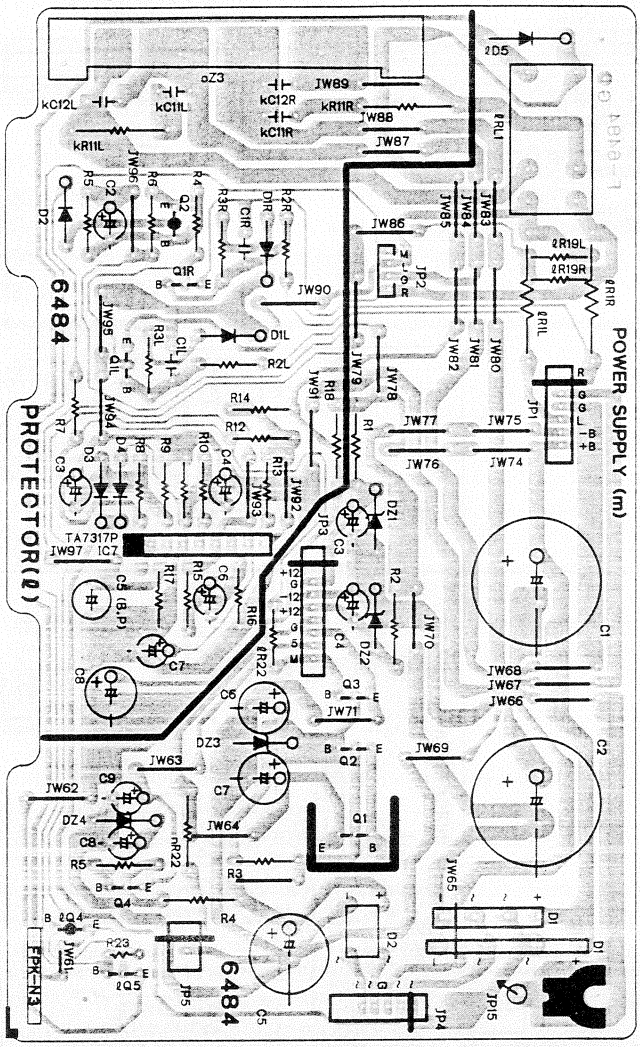
6-5. F-6481 or 6482 Stopper Board

Component Side



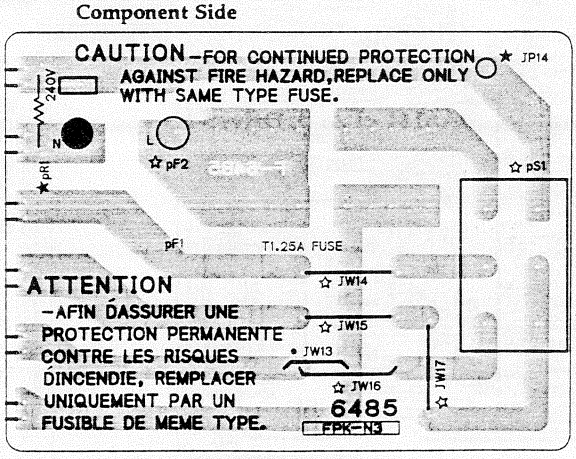
6-9. F-6484 Power Supply Board

Component Side



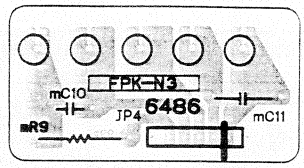
6-10. F-6485 Fuse Board

Component Side



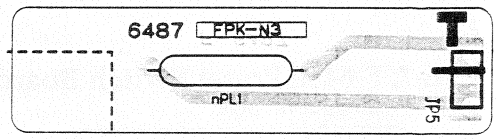
6-11. F-6486 Power Supply Sub-B Board

Component Side



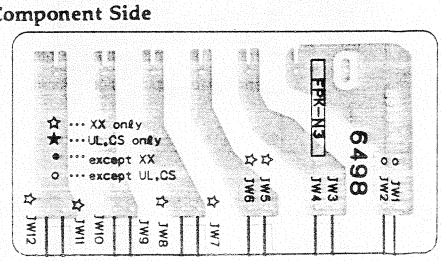
6-12. F-6487 LCD Lamp Board

Component Side



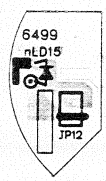
6-13. F-6498 Connector Board

Component Side



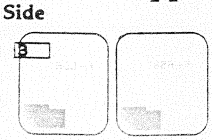
6-14. F-6499 VOLUME Indicator Board

Component Side



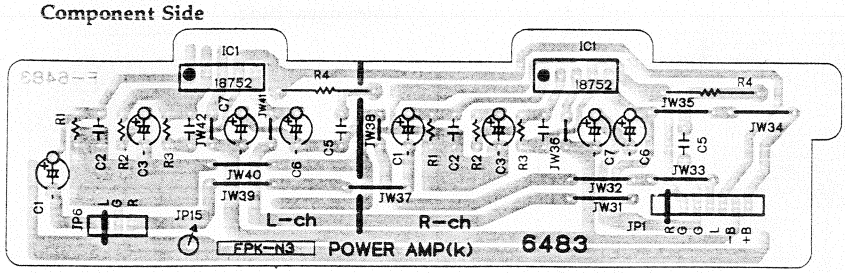
6-15. F-6580 or 6581 Stopper Board-B

Component Side



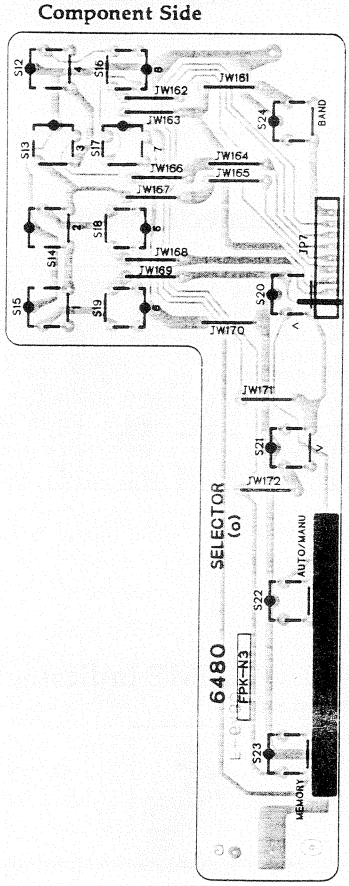
6-6. F-6483 Power Amp. Board

Component Side



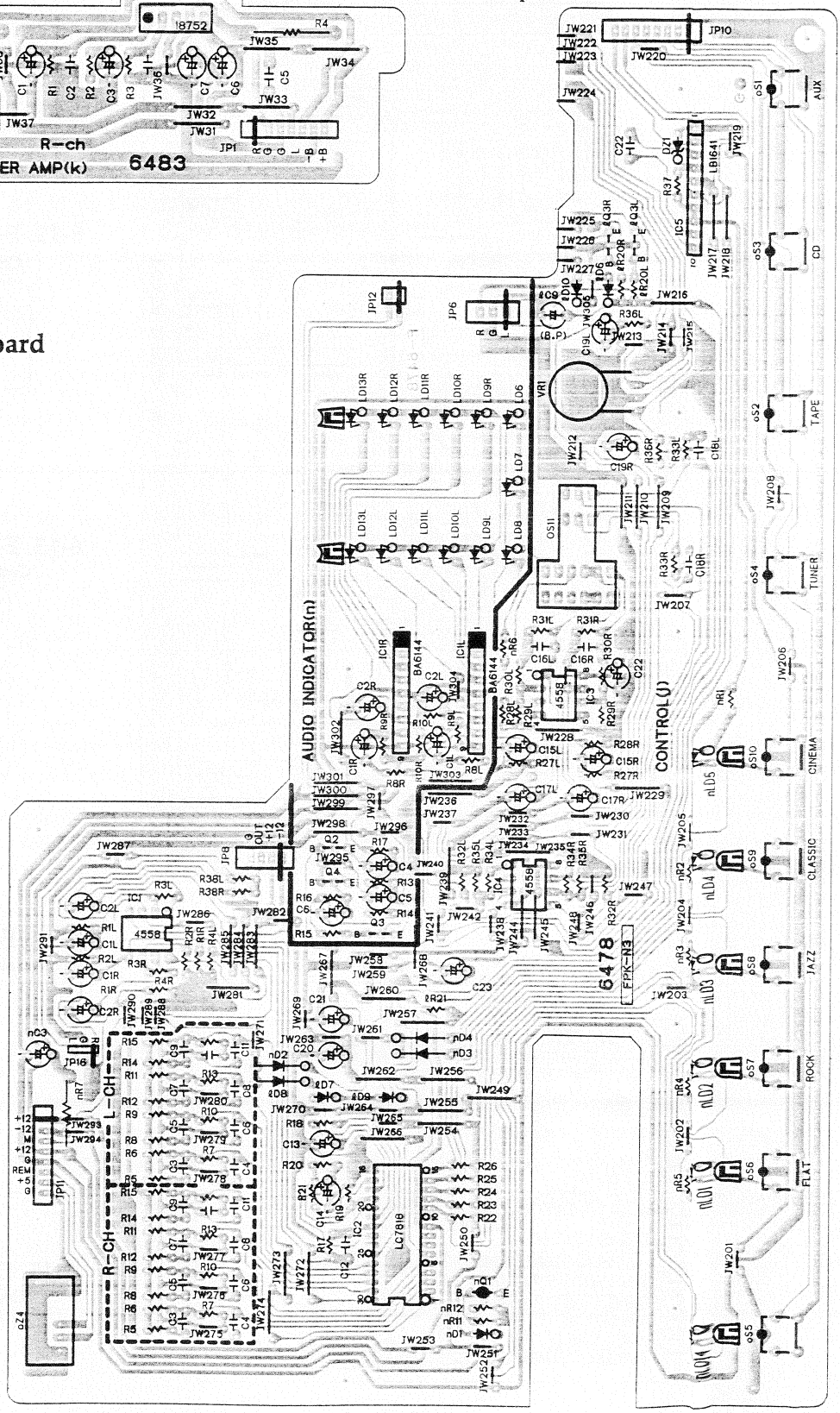
6-7. F-6480 Preset Switch Board

Component Side



6-8. F-6478 INPUT Selector & Control Amp. Board

Component Side

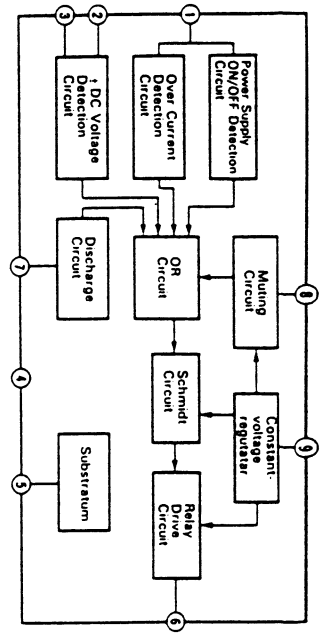


7. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

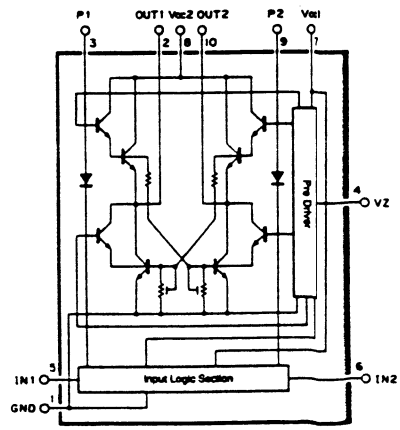
• LC7230-8307<System Control>

Pin Name	Pin No.	I/O	Description	Active
X IN	1	I	Terminal for connecting a oscillator of 4.5MHz .	—
X OUT	80	O		
REMO	3	I	Terminal to input a signal for remote controller.	L
$\overline{\text{STEREO}}$	4	I	Terminal to input a signal for FM STEREO indicator of display. When this terminal LOW,this indicator is lighted.	L
VOL	7	O	Terminal to input a VOLUME position signal for presetting.	H
$\overline{\text{FM}}$	8	O	Terminal to output a signal for selecting each band .	L
$\overline{\text{MW}}$	9			
$\overline{\text{LW}}$	10			
VU	11	O	Terminal to output a signal for volume up.	H
VD	12	O	Terminal to output a signal for volume down.	H
MO/ST	13	O	Terminal to output a signal for selecting FM mode.	H
MUTE	14	O	Terminal to output a signal for muting.	H
CE	15	O	Terminal to output a signal for serial data to LC7821.	H
DO	16		(When CD operation, NEXT signal output.)	H
CLK	17		(When CD operation, BACK signal output.)	⊓
IF CNT	18	O	Terminal to output a control signal for IF. (When CD operation, STOP signal output.)	H
NARROW	19	O	Terminal to output a signal for selecting IF width.	H
POWER OUT	20	O	Terminal to output a signal for POWER control.	H
A MUTE	21	O	Terminal to output a signal for audio muting.	H
STB	22	O	Terminal to output a signal for STB to 74HC375.	H
T7	23	O	(Terminal to output a signal for indication TAPE.)	H
T6	24		(Terminal to output a signal for indication TUNER.)	
T5	25		(Terminal to output a signal for indication AUX.)	
T4	26		(Terminal to output a signal for indication PHONO.)	
⌇	⌇			
T0	30		Terminal to output a signal for key scaning.	
K3	32	I	Terminal to input a signal for key input.	H
⌇	⌇			
K0	35			
K4	6	I	Terminal to input a signal for diode matrix.	H
K5	5			
S1	63	O	Terminal to output a segment signals for LCD.	—
⌇	⌇			
S28	36			
COM 1	65	O	Terminal to output a common signals for LCD.	—
COM 2	64			
$\overline{\text{HOLD}}$	67	I	Terminal to input a back-up signal.	L
$\overline{\text{SD}}$	69	I	When auto tuning operation, terminal to input a signal for receiving station.	L
HCTR	70	I	Terminal to input a FM IF signal.	—
LCTR	71	I	Terminal to input a AM IF signal.	—
FM IN	74	I	Terminal to input a signal for local oscillator from FM VCO.	—
AM IN	75	I	Terminal to input a signal for local oscillator from AM VCO.	—
E01,2	76,77	O	Terminal to output a comparison signal for phase.	—
$\overline{\text{INT}}$	66	I	Terminal to input a signal for remote.	⊓
VDD	31,73		Terminal to supply for positive voltage. +5V	—
VSS	76		Terminal to supply for voltage. GND	—

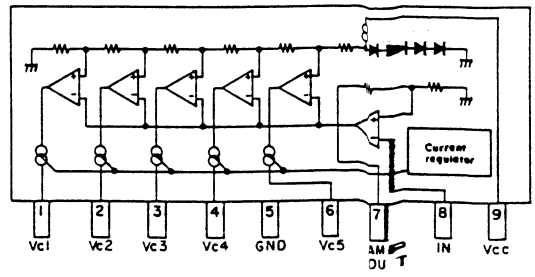
• TA7317P <Protector>



• LB1641 <Motor Driver>



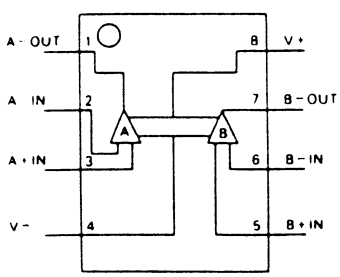
• BA6144 <L.E.D. Drive>



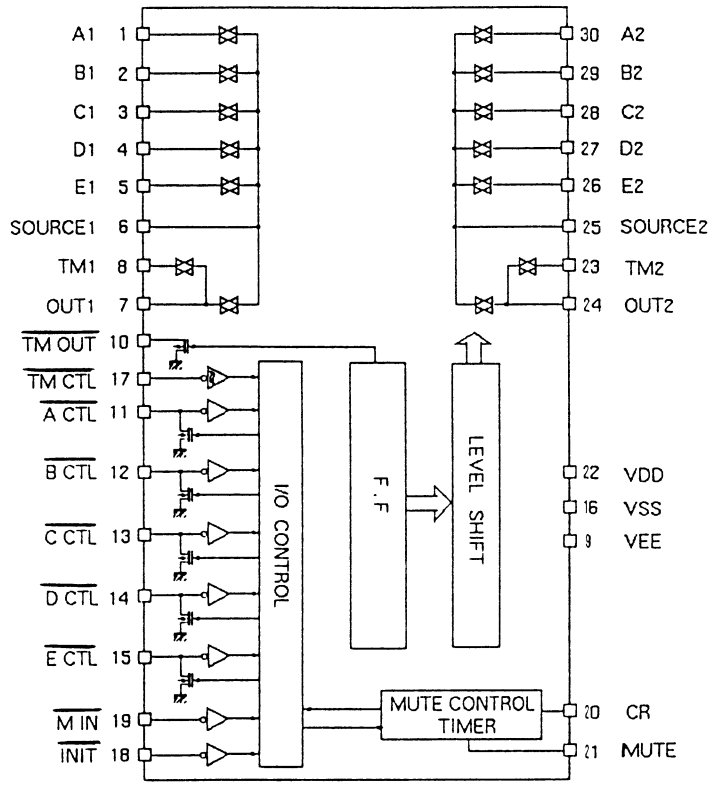
• LA1851N <Tuner>

Pin No.	I/O	Description
1	I	Terminal to input a signal for FM IF.
3		Terminal to supply for positive voltage. +5V
4	O	Terminal to output a signal for FM AFC.
5	O	Terminal to output a signal for AM demodulation.
6	I	Terminal to input a signal for AM demodulation.
7	O	Terminal to output a signal for FM discrimination.
8	O	Terminal to output a signal for FM demodulation.
9	I	Terminal to input a signal for FM demodulation.
10	I	Terminal to input a synchronizing signal for pilot. When this terminal is connected Vcc, VCO is stop.
11	I	Terminal to input a signal for PLL loop filter.
12	O	Terminal to output a signal for separation control.
13		Terminal for connecting a oscillator of 4.56MHz.
14	O	Terminal to output a signal for MPX L-ch.
15	O	Terminal to output a signal for MPX R-ch.
16		Terminal for adjusting AM auto stop level.
17	I	Terminal to input a muting signal. ≧ 1.5V:Mute ON, ≦1.5V: Mute OFF.
18	I	Terminal to input a selecting signal for AM/FM.
19	O	Terminal to output a IF count signal. ≧ 1.5V:IF COUNT ON, ≦1.5V: IF COUNT OFF.
21	I	Terminal to input a signal for tune LED.
22	I	Terminal to input a signal for stereo LED.
23		Ground terminal.
24	I	Terminal to input a signal for AM IF.
26	O	Terminal to output a signal for AM mixer.
27	I	Terminal to input a signal for AM RF.
29		Terminal for AM OSC.
30	O	Terminal for adjusting FM auto stop level.

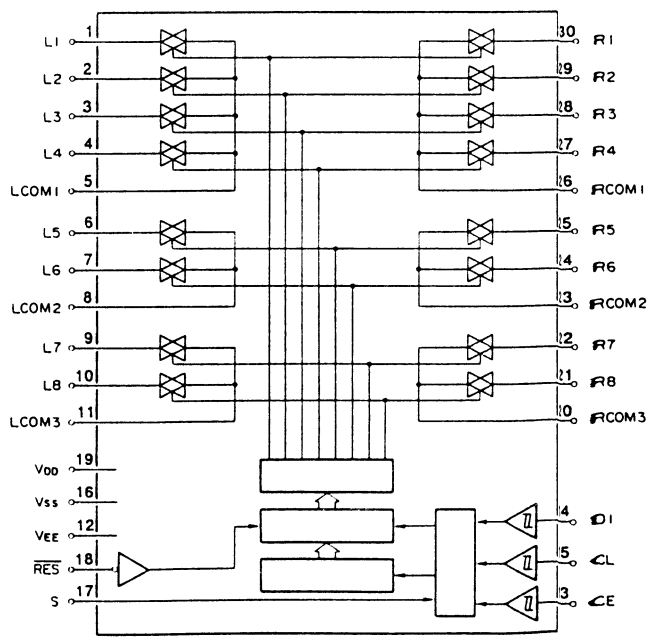
• NJM4558D <OP Amp.>



• LC7818 <Analog Electric Switch>

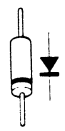


• LC7821 <Analog Electric Switch>

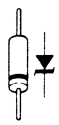


Figers of Semi Conductor

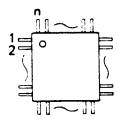
1N4002
1N4003
1S1588
1S2473
10E2



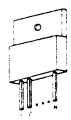
MTZ4.7A
MTZ4.7B
RD12E
RD13E
RD5.6E
05AZ12
05AZ13
05AZ5.6



LC7230

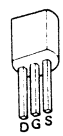


SI-18752



1SS133

2SK192A



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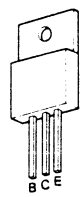
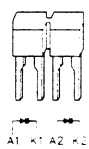
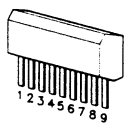


KV1236Z2
SVC321



TA7317P



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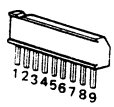

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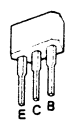
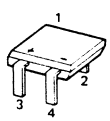
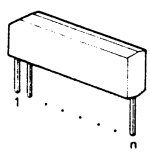


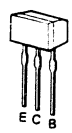
DBB10B
DBB10C
DF02M
DF04M



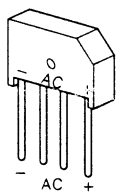
LB1641



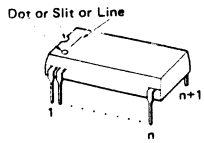
DTA114TS
DTA114YS
DTC114TS
DTC114YS
RN1207
RN1211
RN2207
2SC2458
2SC2786
2SC3327



KBU4D
RBA-402



LA1851N
LC7818
LC7821
NJM4558D



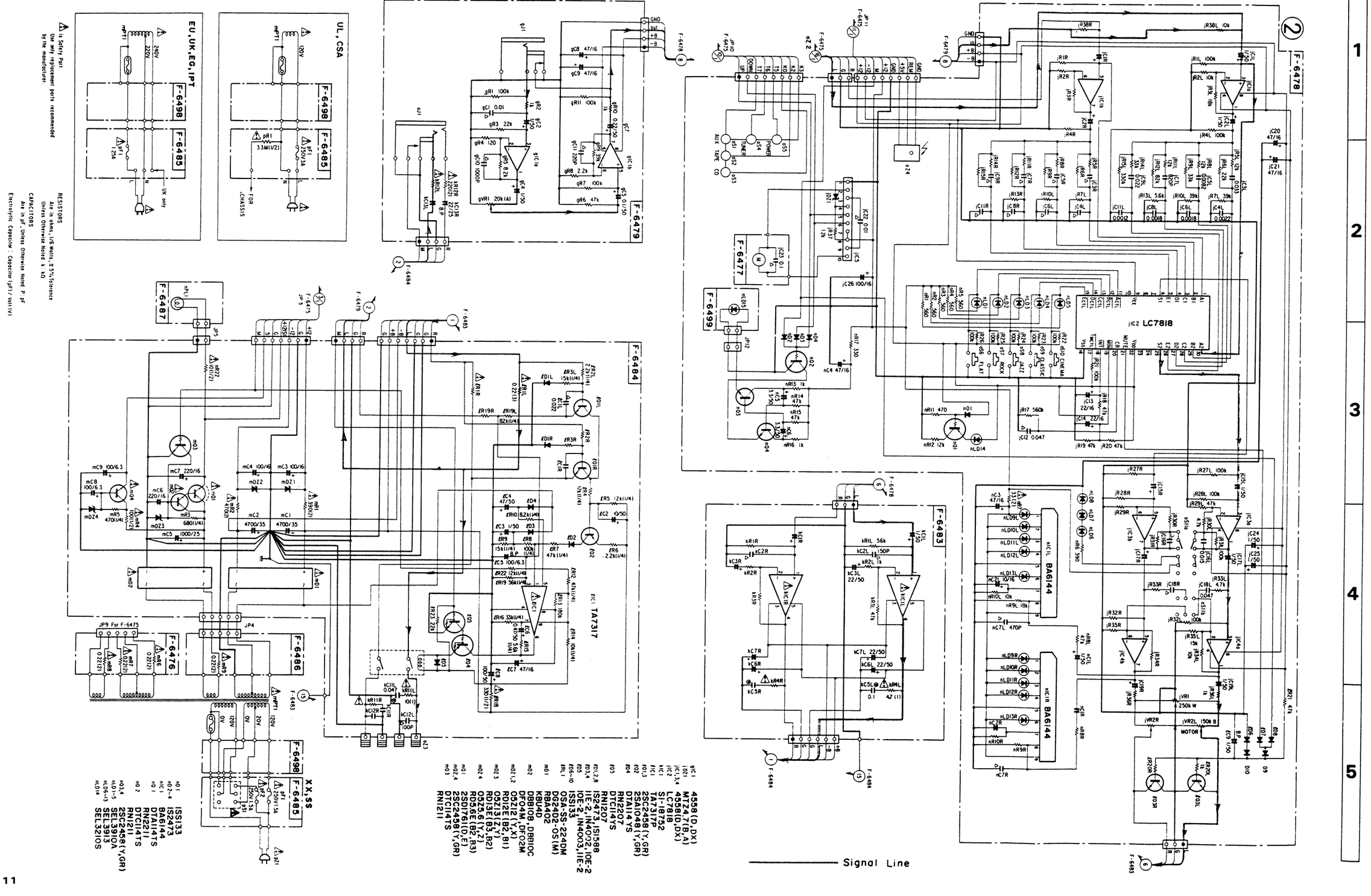
MC-1000/1000L (TU & Amp.)

A B C D E F G H

1 2 3 4 5

8-2. Amplifier Section

- Design and specifications subject to change without notice for improvement.
- La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



⚠ is Safety Part
Use only replacement parts recommended by the manufacturer.

RESISTORS
Are in ohms, 1/6 Watts ±5% Tolerance
Unless Otherwise Noted k kΩ

CAPACITORS
Are in pF Unless Otherwise Noted P pF
Electrolytic Capacitor: Capacitor (μF) / Volt (V)

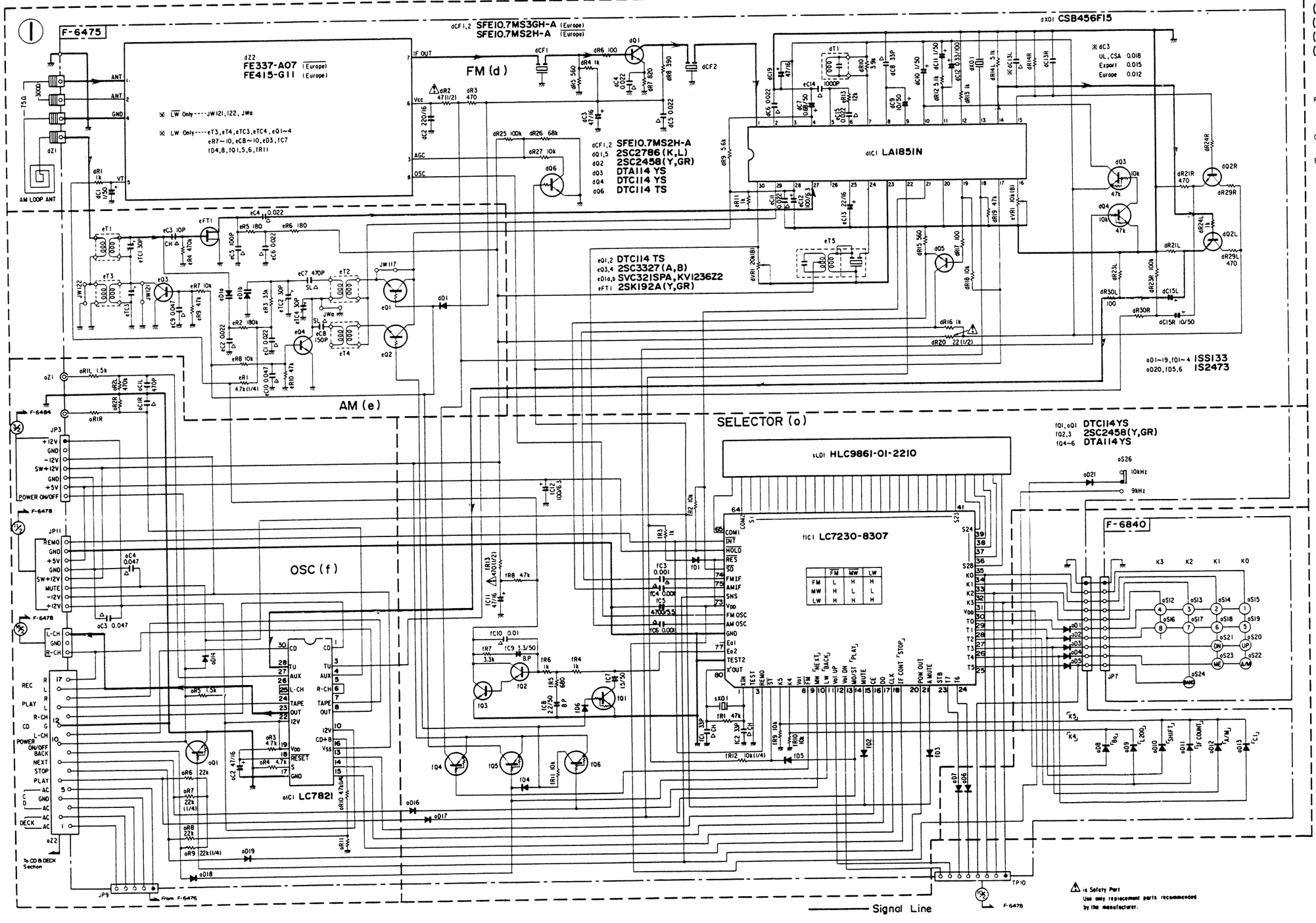
nD1 ISS133
nD2,4 IS2473
nIC1 DTA114TS
nD1 RN2211
nD2 DTC114TS
nD3,4 2SC2458(Y,GR)
nLD1-5 SEL3910A
nLD6-13 SEL3913
nLD14 SEL3210S

nIC1 4558(D,DX)
IC1L,3,4 4558(D,DX)
nIC2 LC7818
nIC1 SI-18752
nIC1 TA7317P
fD1,3 2SC2458(Y,GR)
fD2 2SA1048(Y,GR)
fD4 DTA114 YS
fD5 RN2207
DTC114YS
fD1,2,8 RN1207
fD3,4 IS2473,ISI588
fD5 IIE-2,IN4002,IOE-2
fD6-10 IIE-2,IN4003,IIE-2
fRL ISS133
OSA-SS-224DM
DG2402-OS(M)
nD1 RBA402
KBU4D
nD2 DBBI0B,DBBI0C
DFO4M,DFO2M
nD2,2 O5ZI2(Y,X)
RDI2E(B2,B1)
nD2,3 O5ZI3(Z,Y)
RDI3E(B3,B2)
nD2,4 O5Z56(Y,Z)
nD1 RD56E(B2,B3)
nD2,4 2SD1760(D,E)
nD3 2SC2458(Y,GR)
RN1211

8. SCHEMETIC DIAGRAM

8-1. Tuner Section

- Design and specifications subject to change without notice for improvement.
- La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



SYMBOL OF FUNCTION
(d) FM
(e) AM
(f) OSC
(o) SELECTOR

RESISTORS
Are in ohms, 1/6 Watts, ±5% Tolerance
Unless Otherwise Noted. k=kΩ

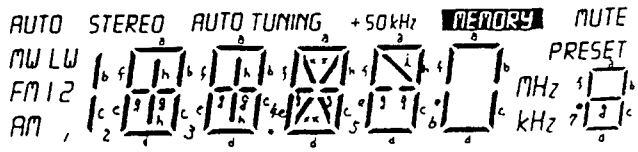
CAPACITORS
Are in μF, Unless Otherwise Noted. P=pF

Electrolytic Capacitors
Capacitors (μF) / Volts (V)

1 2 3 4 5

9. TERMINAL ASSIGNMENT OF HLC9861

No.	COM 1	COM 2	No.	COM 1	COM 2
1	COM 1		16	3e	3g
2		COM 2	17	3d	3c
3	MW	FM	18	3a	3h
4	AUTO	AM	19	4f	4b
5	1	LW	20	4e	4g
6	2	STEREO	21	4d	4c
7	MEMORY	AUTO TUNING	22	4a	X(4x)
8	MUTE	+50KHz	23	5e,f	5a
9	1b,c		24	5d	5g
10	KHz	MHz	25	5b,c	5i
11	2f	2a	26	6a,b,c,e,f	6d
12	2e	2g	27	7f	7b
13	2d	2c	28	7e	7g
14	2b	2h	29	7d	7c
15	3f	3b	30	7a	preset



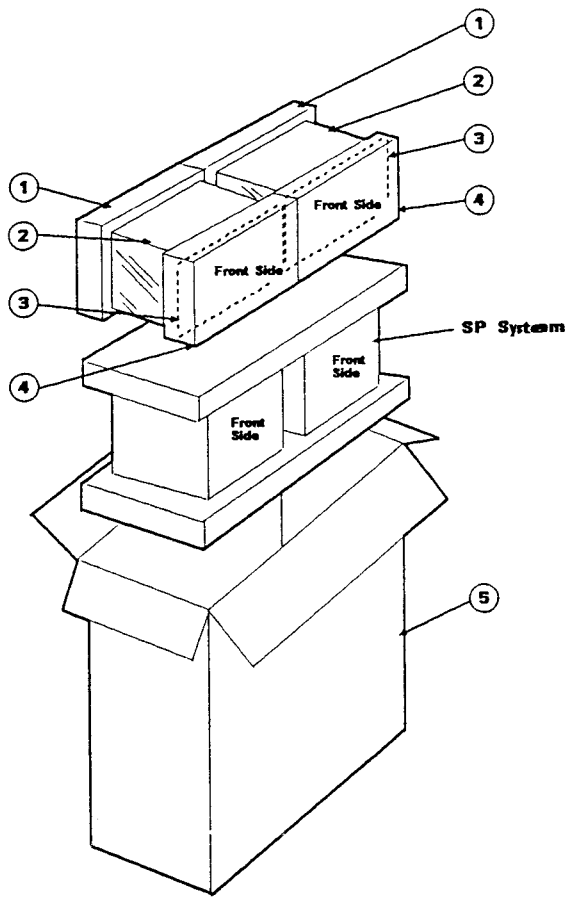
10. PACKING LIST & ACCESSORY LIST

Parts No.	Stock No.	Description
1	85011100	Styrofoam Packing(Rear)
2	9905405546	Vinyl Bag
3	9001070228	Sheet for panel
4	85011200	Styrofoam Packing(Front)
5	85011000	Carton Case for MC-1000 with SP System
	85029800	Carton Case for MC-1000L with SP System
	85031500	Carton Case for MC-1000L without SP System
	83229400	Remote Controller RS-F6
	————	Dry Battery(SUM-3K)
	83228500	AM Loop Antenna
	49335000	Antenna Connector(EU,UK,EG,IPT)
	49590500	FG Cable with connector
	46051700	FM Antenna
	84606600	Antenna Holder
	84457300	Operating Instruction with SP System (E.F.S)
	84457400	Operating Instruction with SP System (H.G.I.Sw)
	82011100	Operating Instruction without SP System (E.F.S)
	82011200	Operating Instruction without SP System (H.G.I.Sw)

Note: There are two kinds of stock No. in this parts list. One is 8 digit and the other one is 10 digit.

E • F • S: English • French and Spanish Version

H • G • I • Sw: Hollands • German • Italian and Swedish Version



SANSUI

SANSUI ELECTRIC CO., LTD.: New River Building, 10-14, Shinkawa 1-chome, Chuo-ku Tokyo 104, Japan
PHONE: (03)5566-1024 FAX: (03)5566-1027 (International Division)
SANSUI USA INC.: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
SANSUI DEUTSCHLAND GMBH: Paul Ehrlich Strasse 8, 6074 Rödermark 2, West Germany
山水電気株式会社 東京都中央区新川1-10-14 (〒104)

(SM2-190) Printed in Japan (1990 09 P) <Stock No. 854900>

≈ CDL 1000

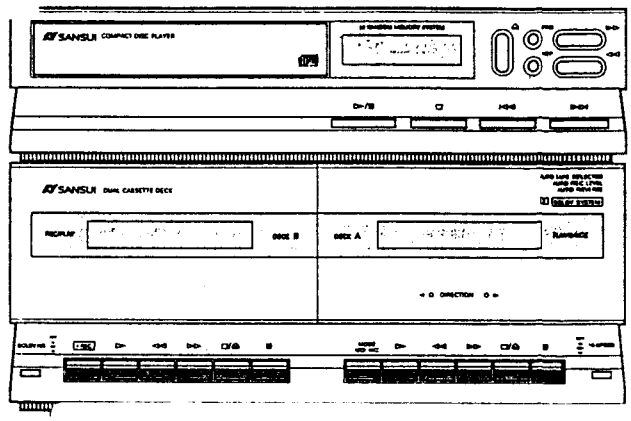
SANSUI

SANS- 00726

SERVICE MANUAL

MC-1000
MC-1000L

MICRO COMPONENT SYSTEM
<CD & CASSETTE DECK SECTION>



CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety.
   Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

NOTICE

1. For packing material and accessory parts, see the service manual (TU & AMP Section) of the MC-1000/1000L.
2. Some printed circuit board are not supplied assembled. To separate these in this Parts List, the stock numbers are not indicated for these boards. However, stock numbers for indivisual parts are indicated.
3. Since some capacitors and resistors are omitted from parts lists in this Parts List, refer to the Common Parts List for capacitors and resistors, which was issued on June 1987.
4. Abbreviations in this Parts List are as follows.

•Abbreviations List

C.R.	: Carbon Resistor	E.B.L	: Low Leak Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	Ta.C.	: Tantalum Capacitor
Ce.R.	: Cement Resistor	F.C.	: Film Capacitor
M.R.	: Metal Film Resistor	M.P.	: Metalized Paper Capacitor
F.R.	: Fusing Resistor	P.C.	: Polystyrene Capacitor
N.I.R.	: Non-Inflammable Resistor	M.M.C.	: Metalized Mylar Capacitor
A.R.	: Array Resistor	A.C.	: Array Capacitor
C.C.	: Ceramic Capacitor	V.R.	: Variable Resistor
C.T.	: Ceramic Capacitor, Temperature Compensation	S.V.R.	: Semi Variable Resistor
E.C.	: Elecrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic Capacitor	Chip R.	: Chip Resistor
E.B.	: Bi-Polar Electrolytic Capacitor	Chip C.	: Chip Capacitor

Specifications

CD Section

Format ..... Compact disc, digital audio system
Pick up ..... 3-Beam, semiconductor laser
Frequency response ..... 20 Hz to 20 kHz, ±0.5 dB
Total harmonic distortion ..... Less than 0.04% (1 kHz)
Signal-to-Noise ratio ..... Better than 98 dB
Dynamic range ..... Better than 92 dB
Wow & flutter ..... Below measurable limit

Cassette deck Section

Track format ..... 4-track/2-channel system
Tape speed ..... 4.75 cm/sec.
Wow/flutter ..... 0.1% max (WRMS)
Fast forwarding (rewinding) time ..... Approx. 150 sec. (for C-60 tape)

Frequency response
Normal tape (LH) ..... 40 to 14,000 Hz ±3 dB
Signal-to-noise ratio
DOLBY NR ON ..... Better than 60 dB
Dimensions ..... 280 mm (11-1/16") W
185 mm (7-5/16") H
263 mm (10-3/8") D
Weight ..... 4.3 kg (9.5 lbs) ne

* Design and specifications are subject to changes without notice for improvements.
* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.
* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

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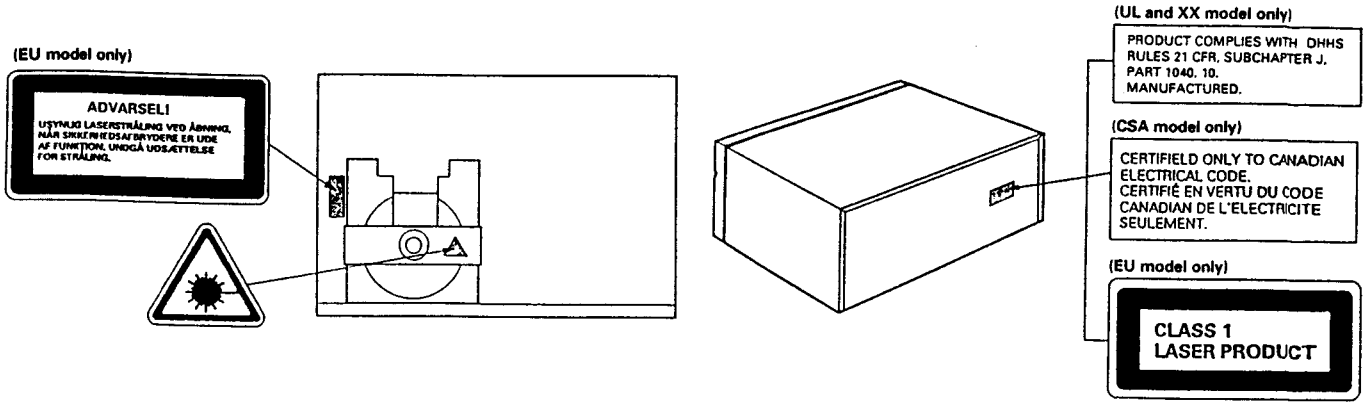
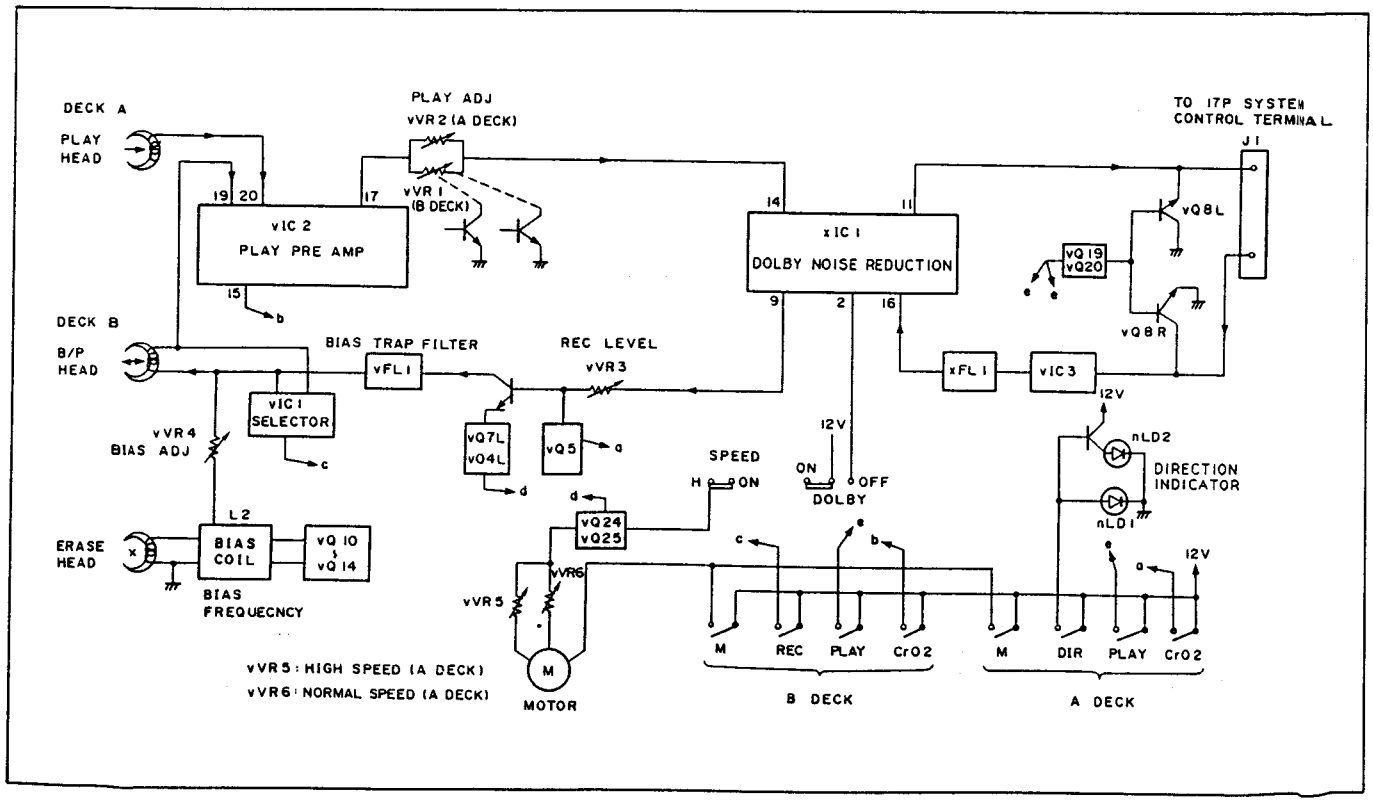
Cautions Concerning Handling of The Laser

The following label has been affixed to the unit, listing the proper procedure for working with the laser beam.


(EU model only)
ADVARSEL!
(UL and XX model only)
PRODUCT COMPLIES WITH DHHS RULES 21 CFR, SUBCHAPTER J, PART 1040, 10. MANUFACTURED.
(CSA model only)
CERTIFIELD ONLY TO CANADIAN ELECTRICAL CODE.
CERTIFIÉ EN VERTU DU CODE CANADIAN DE L'ELECTRICITE SEULEMENT.
(EU model only)
CLASS 1
LASER PRODUCT

1. BLOCK DIAGRAM OF CASSETTE DECK SECTION



SANSUI

SERVICE MANUAL

MC-1000/L

(Black Model)

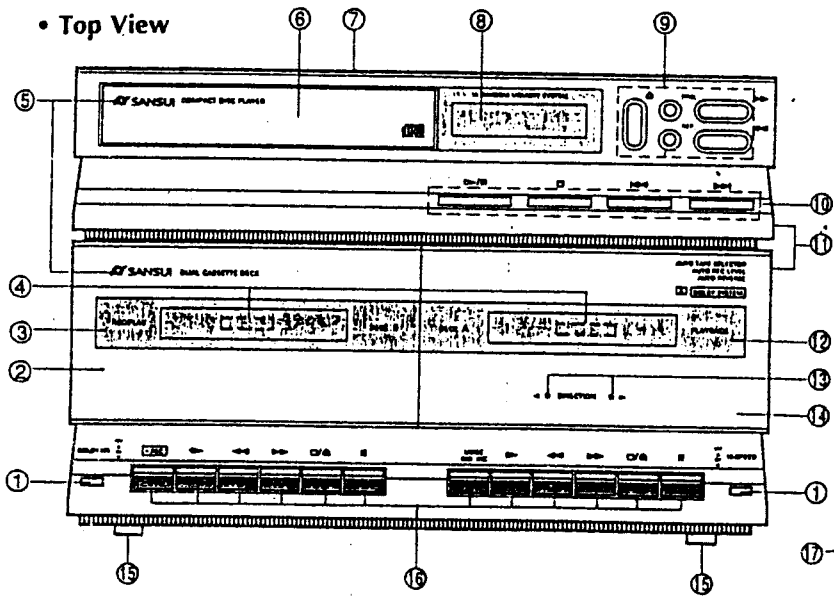
MINI COMPONENT SYSTEM

<CD & CASSETTE DECK SECTION>

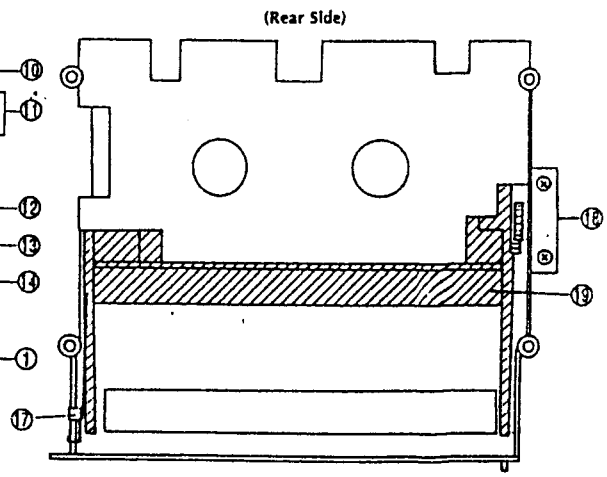
For servicing MC-1000 & 1000L<Black Model>(CD & Cassette Deck Section), please refer to service manual for the MC-1000/L<Gray Model>(CD & Cassette Deck Section) with this manual, since most of the parts and circuit employed in MC-1000/L(Black Model>(CD & Cassette Deck Section) are in Common with the MC-1000/L<Gray Model><CD & Cassette Deck Section)
On the parts list, the changed parts are specified by "●" mark on top of the Stock No.

PARTS LIST OF SET

• Top View



• Cassette Holder



Parts List

Prts No.	Stock No	Description
1	● JS85057000	Push Knob
2	● JS85057400	Cassette Door(L)
3	● JS85056700	Cassette Window(L)
4	JS83274200	Mirror Sheet
5	JS85022000	Logo Badge
6	● JS85057700	Tray Panel Cover
7	● JS85057800	Bonnet
8	● JS85056900	Display Window
9	● JS85057200	Knob, ▷▷ ◁◁ etc.
10	● JS85057300	Knob, ▷| |◁ etc.

Parts No.	Stock No.	Description
11	● JS85057600	Front Panel
12	● JS85056800	Caassette Window,R
13	JS84642100	Indicator
14	● JS85057500	Cassette Door(R)
15	JS84642500	Leg Sheet
16	● JS85057100	Cassette Knob
17	2007079902	Spring
18	2000001065	Damper
19	JS85009100	Cassette Holder

SANSUI

SANSUI ELECTRIC CO., LTD.: New River Building, 10-14, Shinkawa 1-chome, Chuo-ku Tokyo 104, Japan
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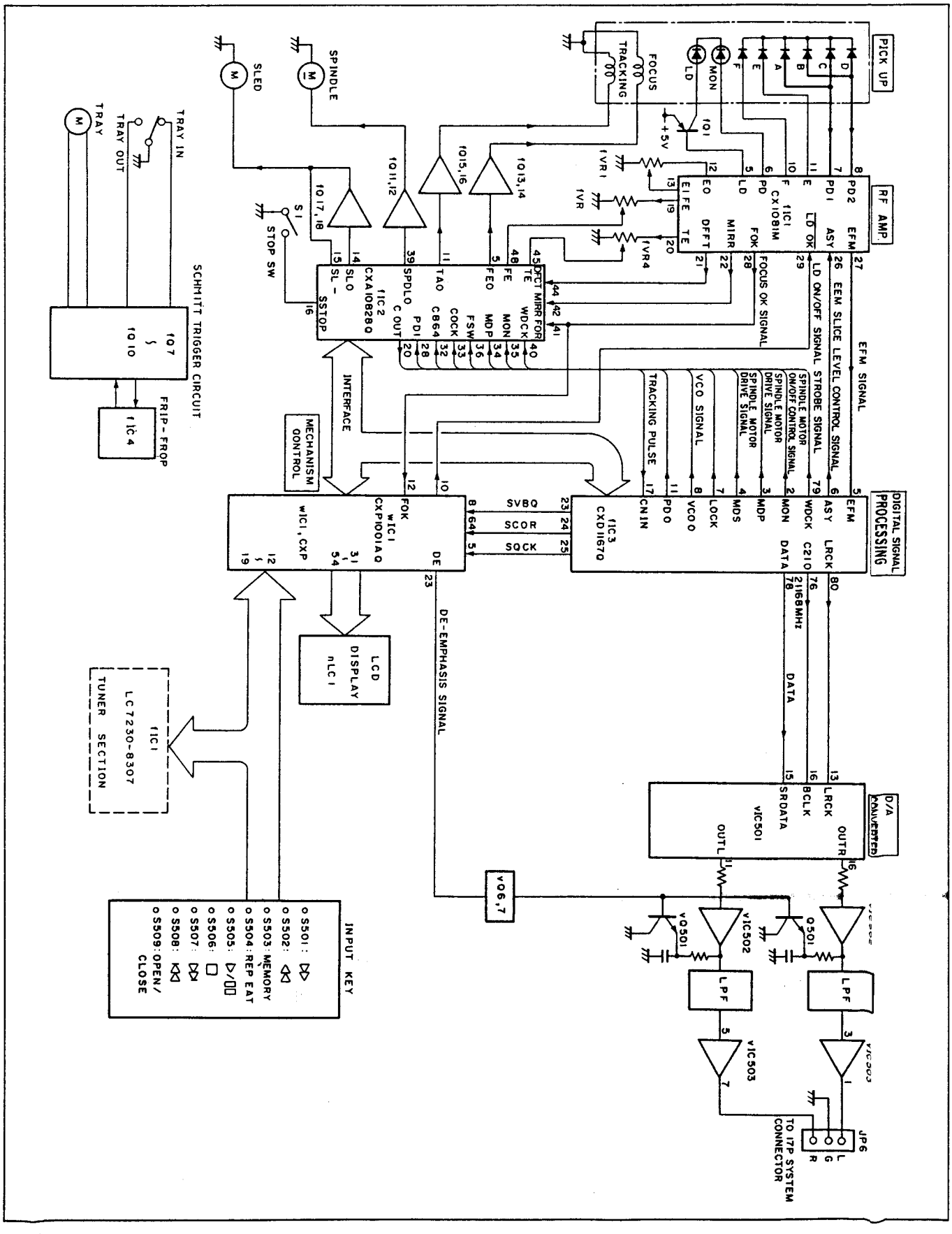
SANSUI USA INC.: 1290 Wall Street West, Lyndhurst, New Jersey 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
SANSUI DEUTSCHLAND GMBH: Paul-Ehrlich-Strasse 8, 6074 Rödermark 2, F.R. Germany
山水電気株式会社 東京都中央区新川1-10-14 (〒104)

(SM2-281) Printed in Japan (1991.07.W)

* This manual is not stocked.(454)

2. BLOCK DIAGRAM OF CD SECTION



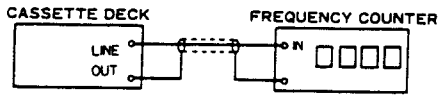
3. ADJUSTMENTS

3-1. Tape Speed Adjustment

- Adjust the tape speed of B-side as fast as A-side.

Note: 1. Use Sansui Test Tape, SCT-S3KL.
(3 kHz signals are recorded on the tape).
2. Connections are shown in Fig. 3-1.

Fig. 3-1



1) Normal Speed Adjustment

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	A-side Mecha. (NORMAL)	PB L & R Terminal Frequency counter.	Playback the TEST TAPE SCT-S3KL. A-side Mecha.	Turn semi-variable resistor tVR6 on the F-6462 board (A-side Mecha.).	3000Hz ± 10Hz	• See Fig. 3-5 and 3-6.
2.	B-side Mecha. (NORMAL)		Playback the TEST TAPE SCT-S3KL. B-side Mecha.	———	Confirm 3000Hz ±20Hz	

2) High Speed Adjustment

Note: 1. Before this adjustment, regulate "1) Normal Speed Adjustment".
2. Short between hot and GND of TP2 (See Fig. 3-6).

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	A-side Mecha. (HIGH)	PB L & R Terminal Frequency counter.	Playback the TEST TAPE SCT-S3KL. A-side Mecha.	Turn semi-variable resistor tVR5 on the F-6462 board (A-side Mecha.).	6000Hz ± 20Hz	• See Fig. 3-5 and 3-6.
2.	B-side Mecha. (HIGH)		Playback the TEST TAPE SCT-S3KL. B-side Mecha.	———	Confirm 6000Hz ± 40Hz	

3-2. Playback Adjustment

Note: 1. Before this adjustment, clean REC/P.B. head surface.
2. For this adjustment, use Sansui Test Tape, SCT-F10K, and SCT-L400.
3. Set the Dolby NR switch to be OFF.
4. Remove the Lid Ass'y.
5. Connections are shown in Fig. 3-2.

Fig. 3-2

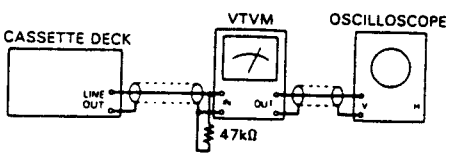
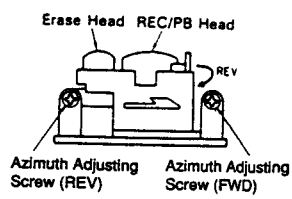


Fig. 3-3



1) A-Side Mecha. Adjustment

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	P.B. Head Adj.	PB L & R Terminal VTVM and Scope.	Playback the TEST TAPE SCT-F10K.	Adjust the azimuth adjusting screw in Fig. 3-3.	MAX. Output both channels on FWD and REV PLAY.	After this adjustment, lock the screw with paint. See Fig. 3-5 and 3-6.
2.	Playback Level Adj.	PB L & R Terminal VTVM and Scope.	Playback the TEST TAPE SCT-L400.	Adjust each vVR2 (L-CH and R-CH, F-6462).	500mV ± 1dB	

Fig. 3-5 Connection of 17P System Control Socket

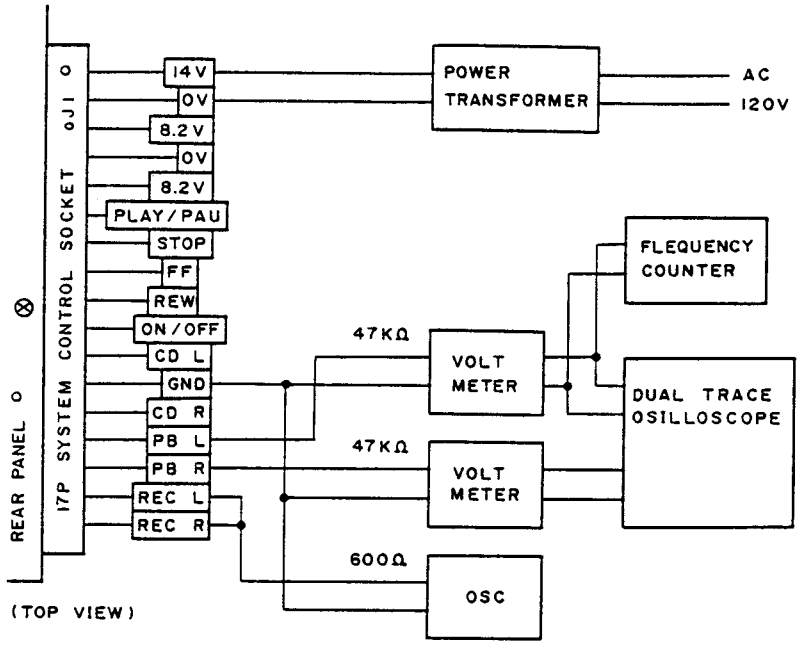
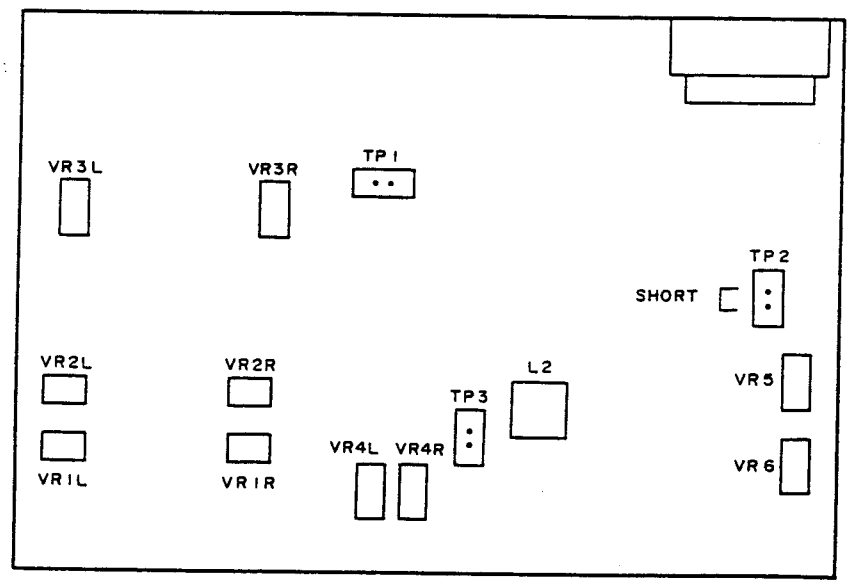


Fig. 3-6 F-6462 Cassette Deck Board



♦ List of Sansui Test Tape

Name of TEST TAPE	Recorded Frequency	Description	Equivalent To
SCT-F40	40 Hz	Playback Frequency Response Check	—
SCT-F1K	1 kHz	High Frequency Equalization Check	—
SCT-F10K	10 kHz	REC/PB Head Adjustment	—
SCT-L400	400 Hz	Playback Level and Indicator Level Adjustment	—
SCT-S3KL	3 kHz	Speed Check and Wow & Flutter Check	—
* AC-224 (NORMAL)	—	Recording Bias Adjustment	TDK AD
* AC-513 (HIGH)	—	REC/PB Level Adjustment	TDK SA
* AC-712 (METAL)	—	Frequency Response Check	TDK MA

***Note:** Some reference tapes marked * are not supplied.
As these are equivalent to ones indicated above, please obtain these blank tapes on your side as possible.

2) B-Side Mecha. Adjustment

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC/P.B. Head Adj.	PB L & R Terminal VTVM and Scope.	Playback the TEST TAPE SCT-F10K.	Adjust the azimuth adjusting screw in Fig. 3-3.	MAX. Output both channels on FWD and REV PLAY.	After this adjustment, lock the screw with paint. See Fig. 3-5 and 3-6.
2.	Playback Level Adj.	PB L & R Terminal VTVM and Scope.	Playback the TEST TAPE SCT-L400.	Adjust each vVR1 (L-CH and R-CH, F-6462).	500mV ± 1dB	

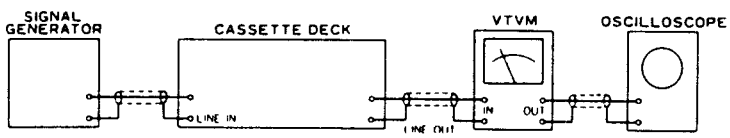
3-3. Bias Adjustment <B-side Mecha. only>

STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	Bias Frequency Adj.	Between TP3 and GND, AC Volt Meter and Frequency counter.	1. Load the TEST TAPE AC-513. 2. Push the PAUSE button. 3. Push the REC button.	Turn the core of L2.	105kHz ± 5kHz	See Fig. 3-6.

3-4. REC Level & Frequency Response Adjustment <B-side Mecha. only>

Note: 1. Connections are shown in Fig. 3-4.
2. Set the Dolby NR switch to be OFF.
3. Short between TP1 & GND (TP).

Fig. 3-4



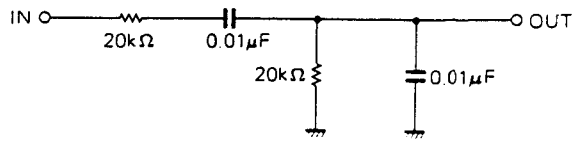
STEP	SUBJECT	MEASURE OUTPUT	SETTING	ADJUSTMENT	ADJUST FOR	REMARKS
1.	REC Level Adj. 1kHz (LCH, RCH)	Feed 1kHz, 24.5mV from S.G. into input (REC L & R Terminal)	PB L & R Terminal, AC Volt Meter and Scope.	Load the TEST TAPE AC-513. 1. Push REC button. 2. Playback the 1kHz signal.	Adjust vVR3L, 3R until playback level and output signal level on recording operation will be equal.	See Fig. 3-5 and 3-6.
2.	REC Level Adj. 10kHz (LCh, RCH)	Feed 10kHz, 24.5mV from S.G. into input (REC L & R Terminal)	PB L & R Terminal, AC Volt Meter and Scope.	Load the TEST TAPE AC-513. 1. Push REC button. 2. Playback the 10kHz signal.	Adjust vVR4L, 4R until playback level and output signal level on recording operation will be equal.	See Fig. 3-5 and 3-6.
3.	Frequency Response Adj. 1kHz	Feed 1kHz 24.5mV and 1kHz from S.G. into input (REC L & R Terminal)	PB L & R Terminal, AC Volt Meter and Scope	Load the TEST TAPE AC-224. 1. Record the 1kHz signals from S.G. 2. Playback the 1kHz signal.	1. Confirm play signal level in less than Rec Signal level ±1.5dB on AC Volt Meter.	If not ±1.5dB, repeat Rec Level Adj. 1kHz
4.	Frequency Response Adj. 10kHz	Feed 10kHz 24.5mV and 10kHz from S.G. into input (REC L & R Terminal)	PB L & R Terminal, AC Volt Meter and Scope	Load the TEST TAPE AC-224. 1. Record the 10kHz signals from S.G. 2. Playback the 10kHz signal.	1. Confirm play signal level in less than Rec Signal level ±3.5dB on AC Volt Meter.	If not ±3.5dB, repeat Rec Level Adj. 10kHz

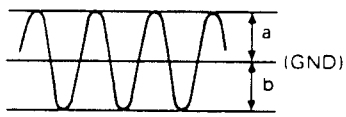
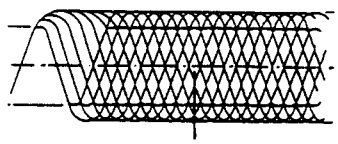
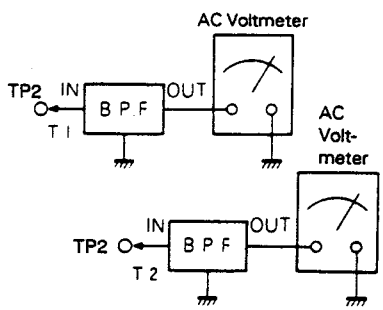
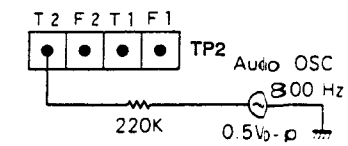
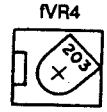
3-5. CD Adjustment

• **Cautions**

1. Turn the power OFF before removing the bonnet.
2. See Figure 3-7 for the locations where adjustments are to be carried out.
3. Use the EIAJ test disk CD-1.
4. The following band pass filter (BPF) is used for adjustments.
5. If the adjustment is unsatisfactory and playback is not possible, adjust as follows:
   1) Set fVR1, fVR2, fVR4 and fVR5 to their mid points.
   2) Adjust the VCO (fVR3) and select playback.
   3) Carry out adjustment steps 2 to 5.
6. In executing steps 2 to 5, connect the probe after playing the disc.

Band Pass Filter (BPF)



Step	Item	Measuring Location	Adjustment Location	Adjustment	Conditions and Notes
1	VCO adjustment (carry out in STOP state)	Connect a frequency counter to TP4 (PLCK)	fVR3 (VCO)	4.32MHz ± 30kHz	• Ground EFM output (JP68 of F-6467) • Turn ON the power then wait at least 10 seconds before adjusting.
2	Tracking offset adjustment	Connect an oscilloscope to T1 of TP2.	fVR1	 Set the oscilloscope to the DC range. Adjust so that a and b have the same level.	• Ground T2 of TP2. • Playback the 8th track of CD-1.
3	Focus offset	Connect an oscilloscope to the RF of TP1.	fVR2	Set to maximum.  Carry out adjustments to achieve a clean overall pattern and so that the indicated portion is wide and symmetrical.	• Playback the 8th track of CD-1.
4	Tracking gain adjustment	Connect AC voltmeter to T1 of TP2 via the BPF. Connect AC voltmeter to T2 of TP2 via the BPF.	fVR4	Using the indicated voltage at T1 of TP2 as a reference, adjust the voltage at T2 to –3.5dB. 	 • Playback the 4th track (no signal) of CD-1. • Apply an 800Hz signal of 0.5Vp-p from SG to T2 of TP2 via a resistance of 22kΩ. Adjust fVR4 to the position shown in the figure. If you do not have a BPF or if –3.5dB cannot be achieved. fVR4 

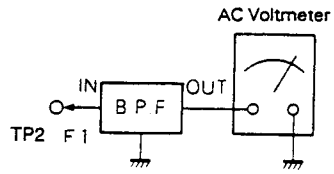
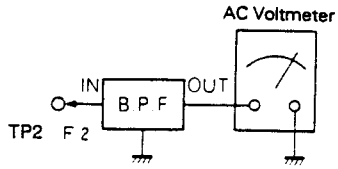
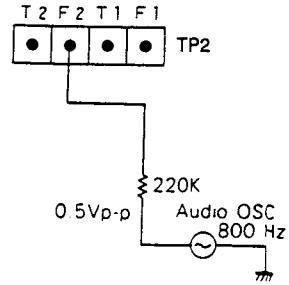
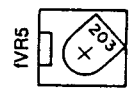
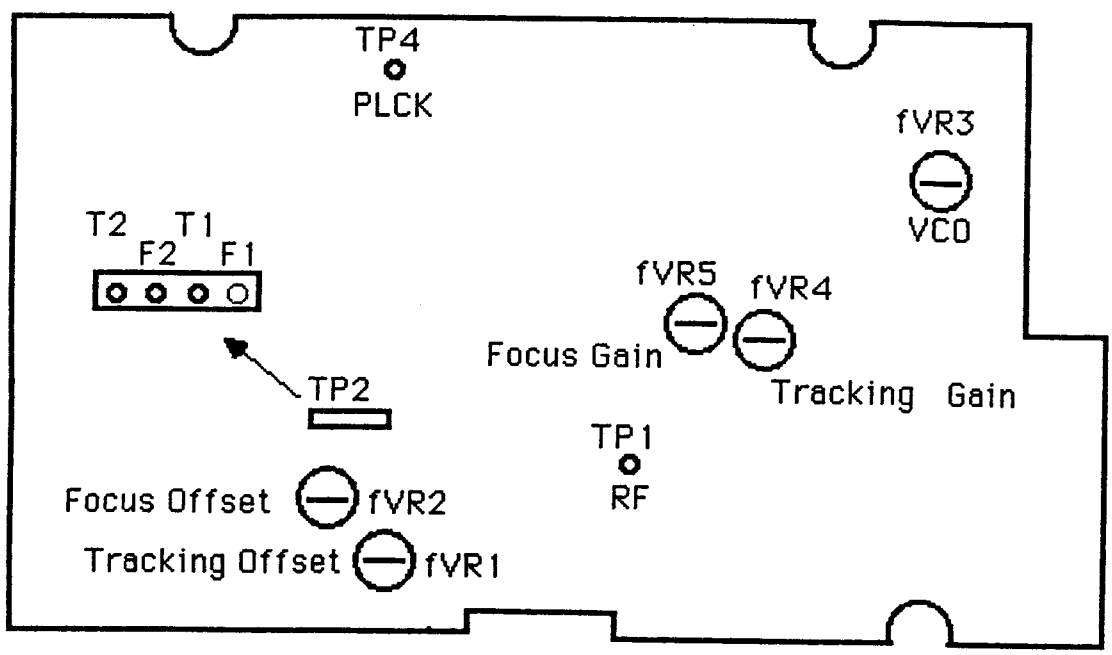
Step	Item	Measuring Location	Adjustment Location	Adjustment	Conditions and Notes
5	Focus gain adjustment	Connect AC voltmeter to F1 of TP2 via the BPF. Connect AC voltmeter to F2 of TP2 via the BPF.	fVR5	  Using the indicated voltage at F1 of TP2 as a reference, adjust the voltage at F2 to –2.5dB.	 • Playback the 4th track (no signal) of CD-1. • Apply an 800Hz signal of 0.5Vp-p from SG to F2 of TP2 via a resistance of 220kΩ.  Adjust fVR4 to position shown in the Figure if you do not have a BPF or if –2.5dB cannot be achieved.

Fig. 3-7 F-6467 CD Main Board



4. PARTS LIST OF BOARD

4-1. F-6462 Cassette Deck Board

<Stock No. 01235601>

Parts No.	Stock No.	Description
•Transistor		
⚠ mQ1	03083901	2SD313HP
mQ2	46367301	2SC2458
mQ3	46367301	2SC2458
•Diode		
⚠ mD1	03117700	10E-2
⚠ mD2	03117700	10E-2
⚠ mD3	03117700	10E-2
⚠ mD4	03117700	10E-2
•Zener Diode		
mDZ1	48555100	MTZ13A
or	48555200	MTZ13B
mL501	48289400	Inductor, 10µH
•Transistor		
nQ1	46834200	DTA144ES
oJ1	49587300	17P SYSTEM Control Socket
•Transistor		
vQ1	46367301	2SC2458
vQ2	46367301	2SC2458
vQ3	46367301	2SC2458
vQ4	46367301	2SC2458
vQ5	46367301	2SC2458
vQ6	46367301	2SC2458
vQ7	46367301	2SC2458
vQ8	46367301	2SC2458
vQ10	46359801	2SC2001
vQ11	46359801	2SC2001
vQ12	48061801	2SC3244
vQ13	46367301	2SC2458
vQ14	46367201	2SA1048
vQ15	46367301	2SC2458
vQ16	46367301	2SC2458
vQ17	46367301	2SC2458
vQ18	46367301	2SC2458
vQ19	46367301	2SC2458
vQ20	46834200	DTA144ES
vQ21	46367201	2SA1048
vQ22	46367301	2SC2458
vQ23	46367301	2SC2458
vQ24	46367301	2SC2458
vQ25	46367201	2SA1048
vQ26	46834200	DTA144ES
vQ27	46834200	DTA144ES
•IC		
vIC1	49323500	µPC1330HA
vIC2	49524000	CXA1115BP
vIC3	49562100	BA3308
vIC503	03607700	NJM4558D
or	49507200	RC4558D
•Diode		
vD1	46464100	1SS133
vD2	46464100	1SS133
vD3	46464100	1SS133
vD4	46464100	1SS133
vD5	46464100	1SS133
vD6	46464100	1SS133
vD7	46464100	1SS133

<F-6462>

Parts No.	Stock No.	Description
vD8	46464100	1SS133
vD9	46464100	1SS133
vD10	46464100	1SS133
vD11	03117700	10E-2
vD12	03117700	10E-2
vD13	46464100	1SS133
vD14	46464100	1SS133
vFL1	83232300	Trap Filter FB-9
vL1	83251900	Inductor
vL2	83232100	Inductor
vVR1	83216600	20kΩ S.V.R., PLAY Level (B Deck)
vVR2	83216600	20kΩ S.V.R., PLAY Level (A Deck)
vVR3	83216600	22kΩ S.V.R., Bias (1kHz)
vVR4	83216800	100kΩ S.V.R., Bias (10 kHz)
vVR5	83216400	5kΩ S.V.R., High Speed
vVR6	83216400	5kΩ S.V.R., Normal Speed
•IC		
xIC1	49557400	CXA1101P
xFL1	83232200	Dolby Filter FB-10D
xFL2	83232300	Filter, FB-9

4-2. F-6464 Dolby Noise Reduction SW Board

Parts No.	Stock No.	Description
oS2	48169400	Push SW., Dolby NR

4-3. F-6465 Speed Switch Board

Parts No.	Stock No.	Description
oS1	48169400	Push SW., SPEED

4-4. F-6466 Direction Indicator Board

Parts No.	Stock No.	Description
•LED		
nLD1	48841200	SEL3910A, ▷
nLD2	48841200	SEL3910A, ◁

4-5. F-6467 CD Main Board

<Stock No. 01235101>

Parts No.	Stock No.	Description
•Transistor		
fQ1	48000801	2SA934
fQ2	46367101	2SC2603
or	46367501	2SC945A
fQ3	46367001	2SA1115
or	46367201	2SA1048

to be continued

<F-6467>

Parts No.	Stock No.	Description
	or 46367401	2SA733A
fQ4	46367101	2SC2603
	or 46367501	2SC945A
fQ5	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ6	46367001	2SA1115
	or 46367201	2SA1048
	or 46367401	2SA733A
fQ7	46359701	2SA952
fQ8	46359701	2SA952
fQ9	46359801	2SC2001
fQ10	46359801	2SC2001
fQ11	48000901	2SC2060
fQ12	48000801	2SA934
fQ13	48000901	2SC2060
fQ14	48000801	2SA934
fQ15	48000901	2SC2060
fQ16	48000801	2SA934
fQ17	48000901	2SC2060
fQ18	48000801	2SA934
fQ21	46367501	2SC945A
fQ22	46367501	2SC945A
•IC		
fIC1	49554800	CXA1081M
fIC2	49552800	CXD1167Q
fIC3	49379400	CXA1082BQ
fIC4	48053600	µPD4013BC
	or 07107500	TC4013BP
fXO1	83226800	Quartz Element
•Diode		
fD1	46464100	1SS133
fD2	46464100	1SS133
fD3	46464100	1SS133
fD4	46464100	1SS133
fD5	46464100	1SS133
fD6	46464100	1SS133
fL1	48289400	10µH Inductor
fVR1	83216600	20kΩ S.V.R., T. offset
fVR2	83216500	10kΩ S.V.R., F. offset
fVR3	83216300	2kΩ S.V.R., VCO
fVR4	83216600	20kΩ S.V.R., T. Gain
fVR5	83216600	20kΩ S.V.R., G. Gain
nLC1	83229900	Liquid Crystal Display
•Transistor		
vQ501	46604301	2SC3327
vQ502	46604301	2SC3327
•IC		
vIC501	49554700	µPD6376GS
•Transistor		
wQ1	48217800	DTC114ES
wQ2	48217800	DTC114ES
wQ3	48217800	DTC114ES
wQ4	48217800	DTC114ES
wQ5	46367501	2SC945A
wQ6	48230400	DTC143TS
wQ7	46719800	DTA124ES
•IC		
wIC1	49554900	CXP1001AQ

<F-6467>

Parts No.	Stock No.	Description
•Diode		
wD1	46464100	1SS133

4-6. F-6468 Power Supply Board

<Stock No. 01235201>

Parts No.	Stock No.	Description
•Transistor		
⚠ mQ501	03083901	2SD313HP
⚠ mQ502	48063301	2SB507
⚠ mQ503	46359801	2SC2001
⚠ mQ504	46359701	2SA952
mQ505	46359801	2SC2001
mQ506	46359701	2SA952
mQ507	46367401	2SA733A
•Diode		
⚠ mD501	83226700	B20SL
mD503	46464100	1SS133
mR3, 4	46403200	100Ω 1/2W N.I.R.
mR501, 502	46404100	560Ω 1/2W N.I.R.
•Zener Diode		
mDZ501	46826200	RD8.2E-B2
mDZ502	46826200	RD8.2E-B2
mDZ503	46825000	RD5.6E-B2
mDZ504	46825000	RD5.6E-B2
mL502	48289400	Inductor, 10µH

4-7. F-6469 Low Pass Filter Board

Parts No.	Stock No.	Description
•IC		
vIC502	49439500	NJM4558L
	or 49553100	RC4558L

4-8. F-6470 Selector Key Switch Board

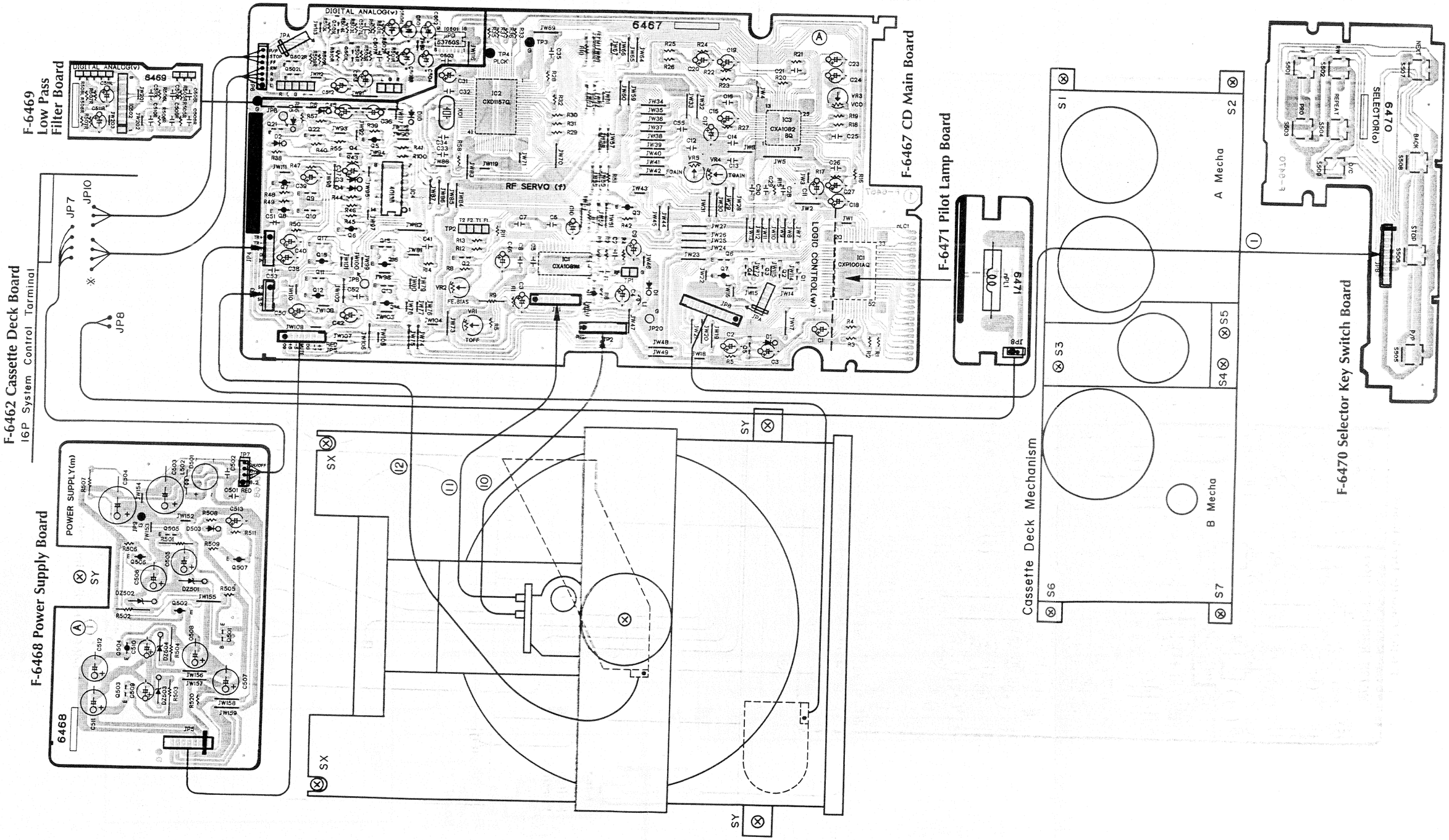
Parts No.	Stock No.	Description
oS501	48306900	Push SW., ▶▶
oS502	48306900	Push SW., ◀◀
oS503	48306900	Push SW., MEMORY
oS504	48306900	Push SW., REPEAT
oS505	48306900	Push SW., ▶/❚❚
oS506	48306900	Push SW., ■
oS507	48306900	Push SW., ▶▶|
oS508	48306900	Push SW., |◀◀
oS509	48306900	Push SW., OPEN/CLOS E

4-9. F-6471 Pilot Lamp Board

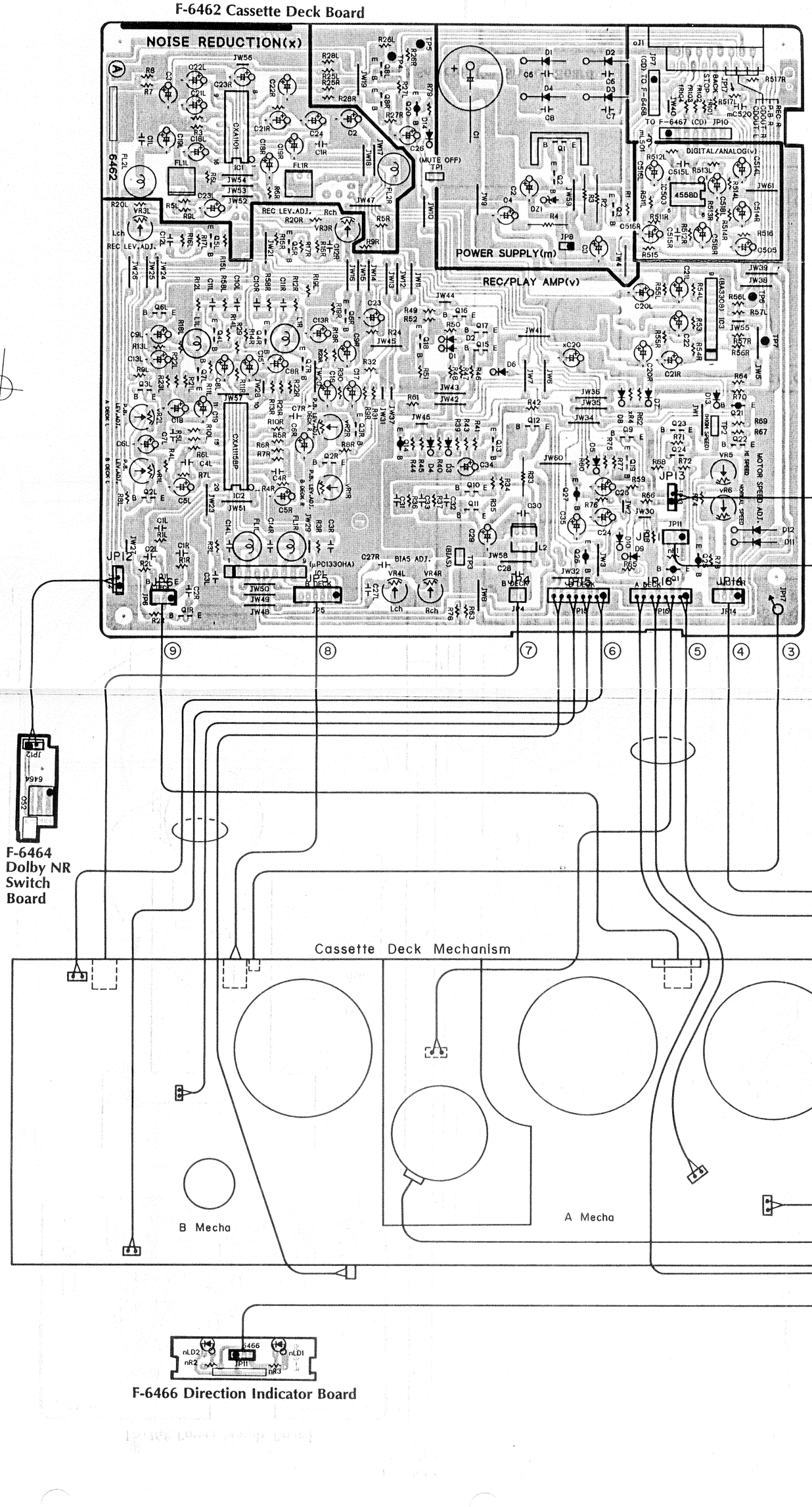
Parts No.	Stock No.	Description
nPL1	83226300	Pilot Lamp, 12V 60mA

MC-1000/1000L
(CD & Deck Section)

5. PARTS LOCATION ON BOARD

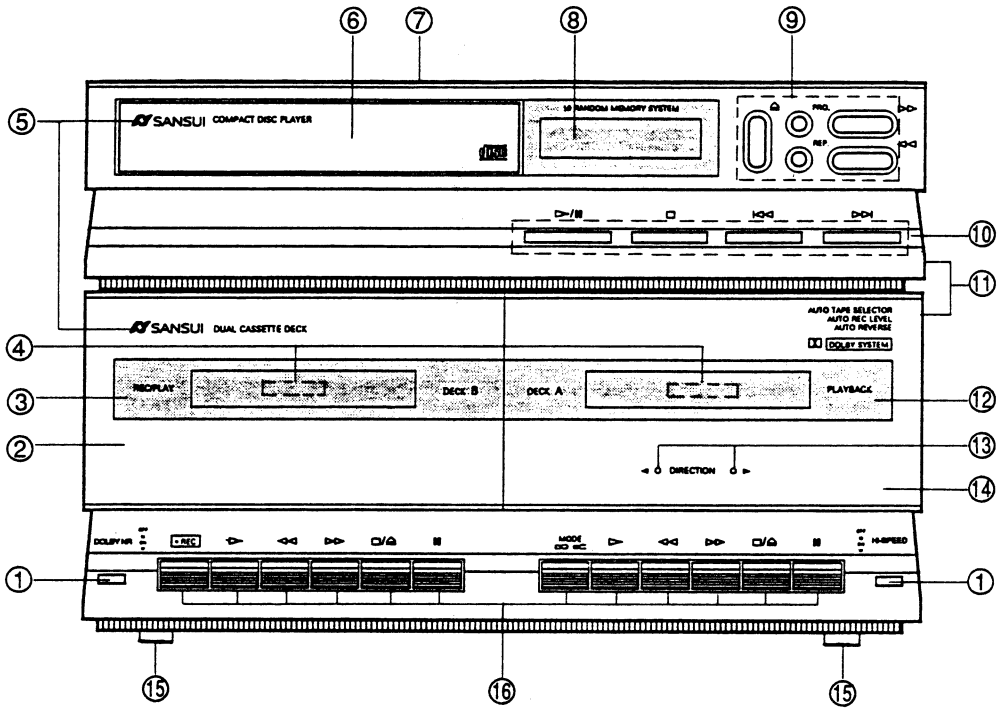


F-6462 Cassette Deck Board



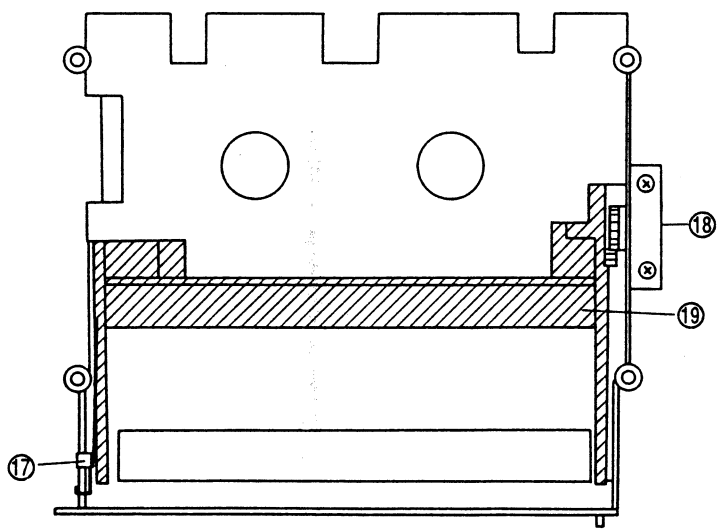
6. PARTS LIST OF SET

• Top View



• Cassette Holder

(Rear Side)



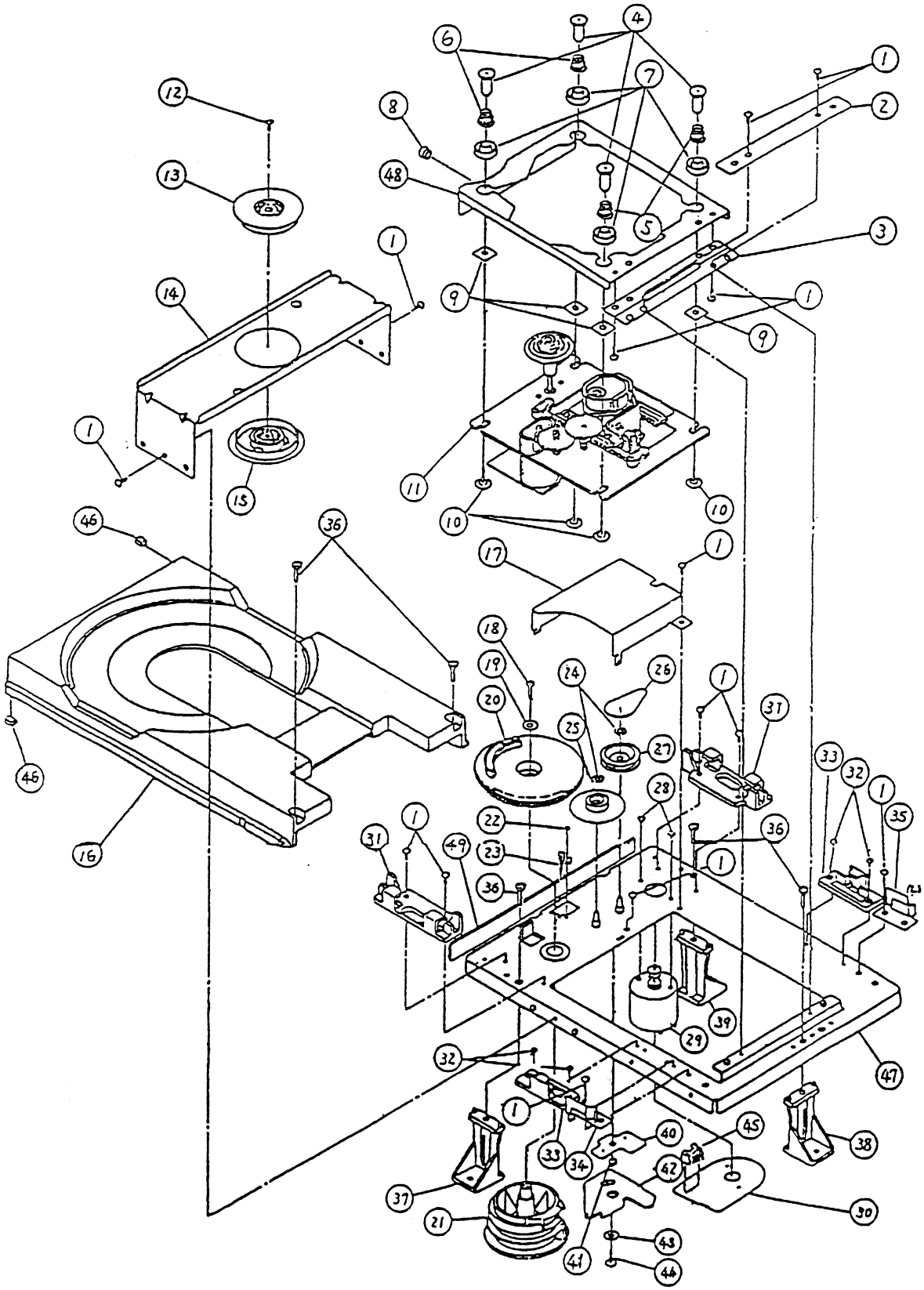
Parts List

Parts No.	Stock No.	Description
1	85009900	Push Knob
2	85009200	Cassette Door (L)
3	85009800	Cassette Window (L)
4	23274200	Mirror Sheet
5	85022000	Logo Badge
6	85010500	Tray Panel Cover
7	84645900	Bonnet
8	85009400	Display Window
9	85009500	Knob, ▷▷, ◁◁ etc.
10	84641300	Knob, ⏮, ⏭ etc.
11	85009000	Front Panel
12	85009700	Cassette Window, R
13	84642100	Indicator
14	85009300	Cassette Door, R
15	84642500	Leg Sheet
16	85010000	Cassette Knob
17	83255700	Spring
18	83255600	Damper
19	85009100	Cassette Holder

7. EXPLODED VIEW OF CD MECHANISM & PARTS LIST

CD Mechanism Ass'y (Type No. KSL-150A CM3 Stock No. C486040394)

Note: Use this list for reference only.
Parts not available separately.



8. REPLACEMENT OF MAIN PARTS

A. Front Panel

1. Remove the bonnet.
2. Remove the lead connector ① of F-6467. (See the Parts Location on Board on Page 10.)
3. Remove lead connectors ② through ⑨ of F-6462. (See the Parts Location on Board on Page 10.)
4. Remove 3 set screws on the lower side of the panel.
5. Remove 2 set screws on both sides of the panel.
6. Draw the panel towards the front side.
7. Remove the Cassette Deck Mechanism Assy, board F-6470, F-6460 & F-6465, cassette holder, etc. (See B. Cassette Deck Mechanism.)

B. Cassette Deck Mechanism Assy

1. Remove the bonnet.
2. Remove the front panel. (Only for the Deck Mechanism Assy)
3. Remove 7 Deck Mechanism Assy set screws (S1) through (S7). (See the Parts Location On Board on Page 10.)
4. Open the Cassette Door.
5. Draw the Deck Mechanism Assy out of the panel, from the rear side.

C. Tray Panel of CD

1. Turn ON the OPEN/CLOSE switch and pull the tray out.
2. Draw the tray panel out upwardly.

D. Tray of CD

1. Remove the bonnet.
2. Remove 2 SX screws in the rear part of the tray. (See the Parts Location On Board on Page 10.)
3. Set the OPEN/CLOSE switch to ON and pull the tray out.
4. Draw the tray out towards you.

* To mount the tray, insert it in the same status as it was drawn out towards you.

E. CD Mechanism Assy and Pickup Assy

* Before removing lead connectors ⑩ and ⑪ (See Page 10) from the Pickup, solder the portion shown by the arrow of Fig. 8-2. This is to prevent the Pickup from electrostatic damage. On the contrary, before mounting it, first connect the lead connector and then disconnect the soldering in the portion of the arrow shown in Fig. 8-2.

1. Remove the bonnet.
2. Pull the tray out.
3. Remove 3 screws (S9) which fix the Mechanism Assy. (See the Parts Location on Board on Page 10.)
4. Remove the board F-6464. (See the Parts Location on Board on Page 11.)
5. Remove the chuck chassis.
6. Remove 2 shaft clamps ⑫.
7. Remove screw ⑧ and gear A ⑨.
8. Pull the shaft out of the Pickup Assy.
9. Remove lead connectors ⑩, ⑪ and ⑫ from the CD Mechanism Assy. (See the Parts Location on Board on Page 10.)

KSM-150 Drive unit

Fig. 8-1

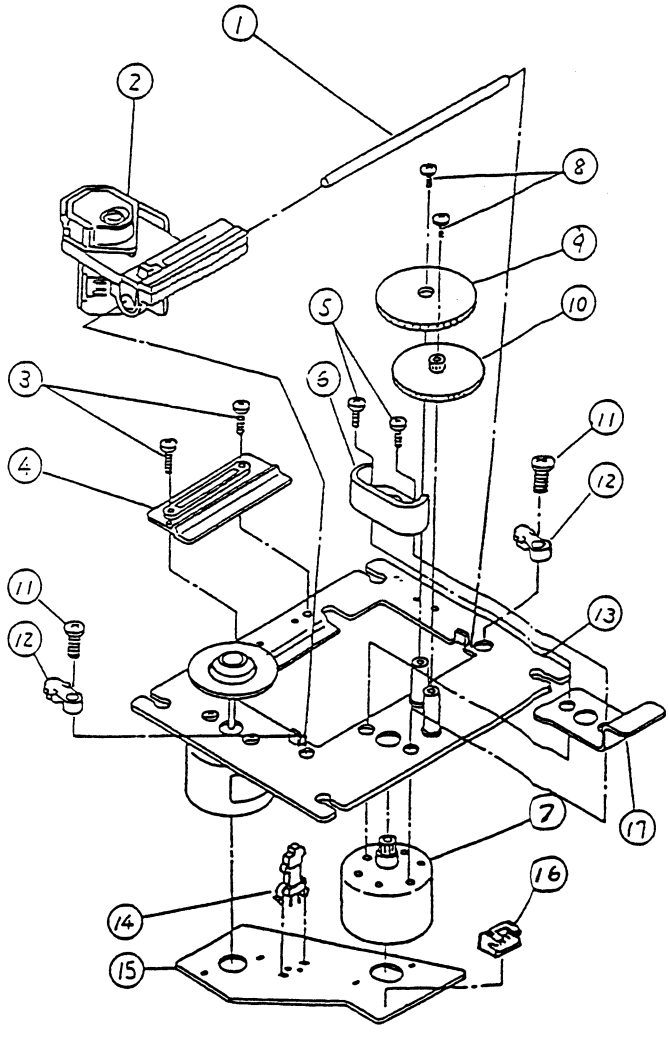
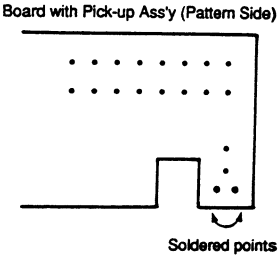


Fig. 8-2



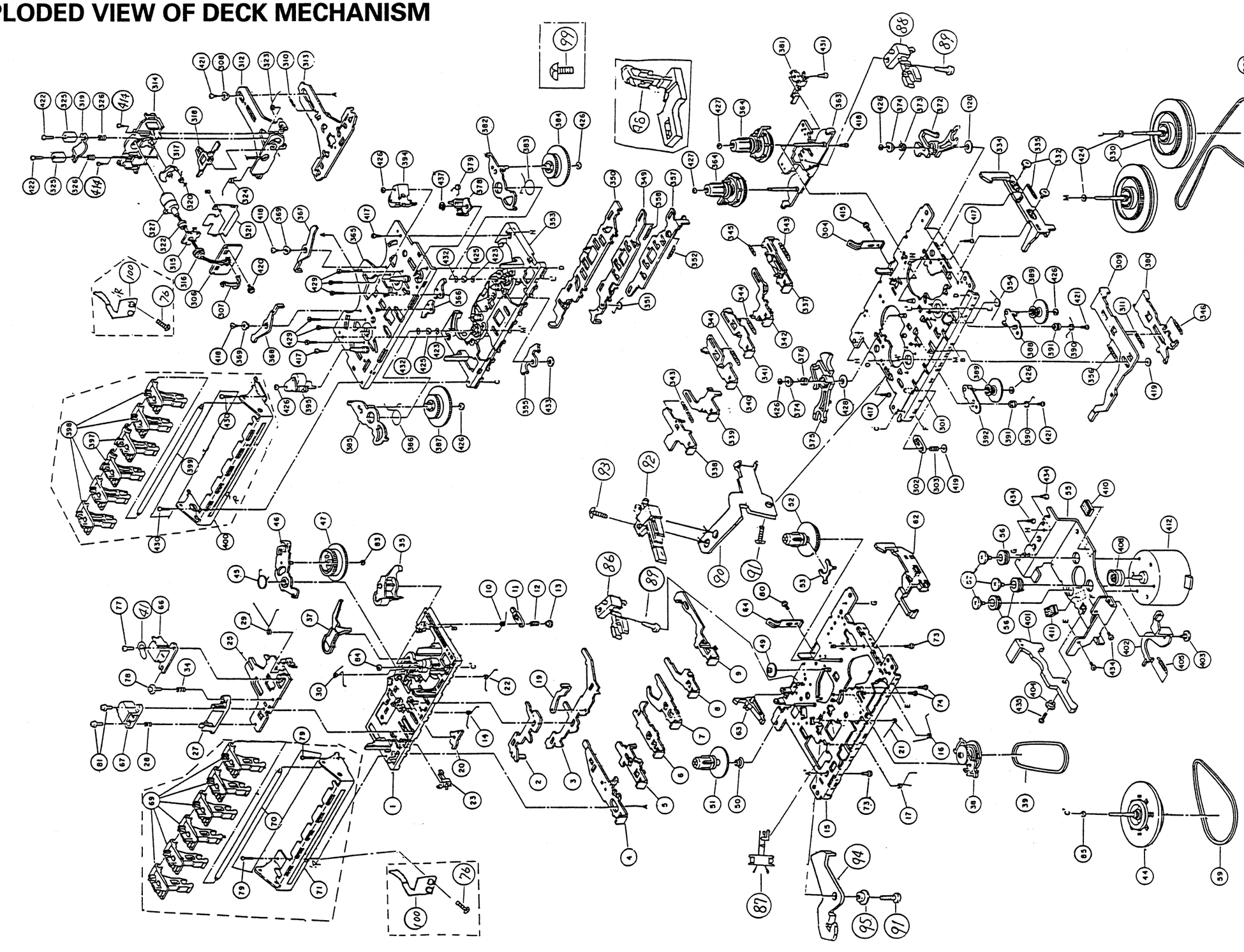
9. PARTS LIST OF DECK MECHANISM

Parts No.	Stock No.	Description
1	0192114301	Base Ass'y
2	0019211409	Switch Actuator
3	0019211408	Push Button Actuator
4	0019211422	Record Button Lever
5	0019211423	Play Button Lever
6	0019211424	Rewind Button Lever
7	0019211425	Fast Forward Button Lever
8	0019211426	Stop Button Lever
9	0019211461	Pause Button Lever
10	019211413A	P Control Spring
11	0019211455	Pause Lever (E)
12	0019211412	Pause Lever Spring
13	0019211411	Pause Stopper
14	0019211414	Button Lever Spring (A)
15	0192101501	Chassis Ass'y
16	0019211416	E Actuator Spring
17	0019211417	P.S. Lever Spring
19	0182101159	E Kick Lever
20	0019211420	PR Stopper
21	0019211421	Record Button Lever Spring
22	0019211415	Button Lever Spring (B)
23	4400000101	Leaf Switch MSW-1541T
25	0019210302	Head Panel
27	0019210306	Head Base
28	0018210308	E.H. Spring
29	0019210303	Panel P Spring
30	0019211418	M Control Spring
34	0018210307	Azimuth Spring
35	0192104301	Pinch Roller Arm Ass'y
37	0019212604	Sensing Lever
38	0192107302	RF Clutch Ass'y
39	0019210703	RF Belt (Square)
41	0094800000	B3 Lug 2.0
44	0192109303	Flywheel Ass'y
45	0019212605	Gear Plate Spring
46	0192126502	Gear Plate Ass'y
47	0019212602	Cam Gear
49	0018211070	FF Gear
50	0018291099	Back Tension Spring
51	0192105306	Supply Reel Ass'y
52	0192105305	Take Up Reel Ass'y
53	0019210506	Sensor
55	0018511410	Motor Bracket
56	0018201306	Motor Rubber
57	0018211202	Motor Collar Screw
59	0016680801	Main Belt (Square)
62	0019211302	Eject Slide Lever
63	0018211069	Record Safety Lever
64	0018291006	Pack Spring
66	4030420222	R/P Head (MS15R-AA2N1)
67	4030320199	Erase Head (LE15A-C1)
69	0018213107	Operation Lever
70	0018293103	Button Lever Shaft
71	0018213119	Button Flame (S)
73	3049052005	P Tapping Bind Screw M2×5
74	3049222045	Camera Tapping Screw M2×4.5
76	3049042004	C Tapping Screw m2×4
77	3019272003	(+) Bind Screw M2×3
78	0099220000	Azimuth Screw M2×7
79	3049222009	9 (Taptite-B) FLT2009 ZN3A
80	3049042003	C Tapping Screw M2×3 (Special)
81	3019082075	(+) (–) Cap Screw M2×7.5
83	3029123803	P Washer Cut 1.2×3.8×0.3
84	3029143805	P Washer Cut 1.4×3.8×0.5
85	3029203503	P Washer 2×3.5×0.3
86	0064010162	Record Switch MSW-1275ASNK
87	4400000138	Leaf Switch LSA-1115RK1
88	0064010138	Leaf Switch MSW-1275
89	3049032005	Tapping Screw 2×5
90	0018510118	Dir Switch Bracket
91	3049032004	Tapping Screw 2×4
92	4400000076	Leaf Switch MSW-1473NBK
93	3049032004	Tapping Screw 2×4
94	0019210201	Record Arm
98	4400000090	Leaf Switch MSW-1664
99	3019262005	Cap Screw 2×5 3019262005
100	0018213120	Frame Bracket
301	0185101303	Chassis Ass'y
302	0018210115	Pause Lever
303	0018210116	Pause Lever Spring
301	0018291006	Pack Spring
306	0018510121	H.W. Terminal Plate
307	0018650965	Wire Clamp
308	0018510453	H.P. Collar
309	0018510408	Release Plate
310	0018510409	R.C. Plate Spring
311	0018510458	R.C. Spring (M)
312	0018510414	Head Panel
313	0018510415	R.C. Plate
314	0018510439	Head Mount
315	0018510418	Holder
316	0018510444	Pinion Gear
317	0018510420	H Turn Over Gear
318	0018510421	Head Slide Plate
319	0018510424	Head Spring Plate
320	0018510425	H Turn Over Spring

Parts No.	Stock No.	Description
321	0018510445	H Shield Plate
322	0018510427	H Holder Spring
323	0018510428	Pinch Roller Spring (F)
324	0018510429	Pinch Roller Spring (R)
325	0018510436	Screw Holder
326	0018650259	Azimuth Spring (D)
327	4030420223	Play Head (YK10R-SS2C0)
330	0185112504	Flywheel Ass'y
332	0018211223	P.K. Collar Screw (A)
333	0018511417	Main Belt (Square)
334	0018511703	Eject Slide Lever
335	0018511702	Eject Slide Lever Spring
337	0185102312	Prog Button Lever Ass'y
338	0185102325	Mode Button Lever Ass'y
339	0185102327	Play Button Lever
340	0018510235	FF Button Lever (R)
341	0018510234	FF Button Lever (F)
342	0185102317	Stop Button Lever
343	0018510270	Prog Button Lever Spring
344	0018510269	FF Button Lever Spring
345	0018510227	Pull Arm Spring
346	0018511606	FF Switch Plate Spring
349	0185102321	Lock Actuator Ass'y
350	0018510284	Slide Plate
351	0018510276	Lock Release spring
352	0018510267	Switch Actuator Spring
353	0185102504	Button Base Ass'y
354	0018510221	Stop Button Lever Spring
355	0018510241	FF Control Arm
356	0018510242	Button Lever Spring (P)
357	0185102322	Switch Actuator Ass'y
358	0018510267	Lock Actuator Spring
363	0185111301	Reel Plate Ass'y
364	0185111501	Reel Ass'y
365	0185118303	Sub Chassis Ass'y
366	0018511810	RC Arm
367	0185118057	Auto Control Arm (F)
368	0185118067	Auto Control Arm (R)
369	0018511807	Control Arm Collar
372	0018512001	Auto Lever (F)
373	0018512003	Auto Lever (R) Spring
374	0018512005	Spring Stopper
375	0018512002	Auto Lever (R)
376	0018512004	Auto Lever (F) Spring
378	0018510303	Turn Over Arm
379	0018510304	Turn Over Spring
380	0018511602	FF Switch Plate
381	4400000148	Leaf Switch MSW-1290CV
382	0185105302	T Gear Arm (F) Ass'y
383	0018510504	T Gear Arm (F) Spring
384	0018510503	T Cam Gear (F)
385	0185106302	T Gear Arm (R) Ass'y
386	0018510603	T Gear Arm (R) Spring
387	0018510602	T Cam Gear (R)
388	0185107301	FF Gear Arm (F) Ass'y
389	0018510703	FF Gear
390	0018510704	FF Gear Arm Spring (F)
391	0018510705	FF Gear Arm Collar
392	0185108301	FF Gear Arm (R) Ass'y
394	0185109502	Pinch Roller (F) Ass'y
395	0185110502	Pinch Roller (R) Ass'y
397	0018513104	Operation Lever
398	0018213107	Operation Lever
399	0018293103	Button Lever Shaft
400	0018513110	Button Flame (S)
401	0018511419	P Kick Lever (B)
402	0018511413	P Kick Lever (A)
403	0018211223	P Kick Collar Screw (A)
404	0018211224	Collar (B)
405	0018511404	P Kick Lever Spring
408	0018511420	Motor Pulley
410	0182112101	Anti-Vibration Felt Mat
411	0018211296	Anti-Vibration Felt Mat
412	4020100179	Motor Shu-2L00
414	3049251704	Camera S Tapping Screw 1.7×4
415	3049302003	C Tapping Screw M2×3 (Special)
417	3049052006	P Tapping Screw M2×6
418	3049221703	Camera S Tapping Screw M1.7×3
419	3029215005	P Washer Cut 2.1×5×0.5
420	3019282004	Two Lock Screw M2×4
421	3049251704	Camera S Tapping Screw M1.7×4
422	3019082012	(+) (–) Screw M2×12
423	3029203503	P Washer 2×3.5×0.3
424	3029213003	P Washer 2.1×3×0.3
425	3029144005	P Washer Cut 1.4×4×0.5
426	3029123025	P Washer Cut 1.2×3×0.25
427	3029123704	P Washer Cut 1.2×7×0.4
428	3029308513	P Washer 3×8.5×0.13
429	3049251785	Camera S Tapping Screw M1.7×8.5
430	3049042009	C Tapping Screw M2×9
431	3049292005	(+) C Tapping Screw M2×5
432	3029174003	P Washer 1.75×4×0.3
433	3029286005	P Washer 2.8×6×0.5
434	3049042004	C Tapping Screw M2×4
436	0011140302	Cord Clamp
437	3130000020	E Ring S2.0

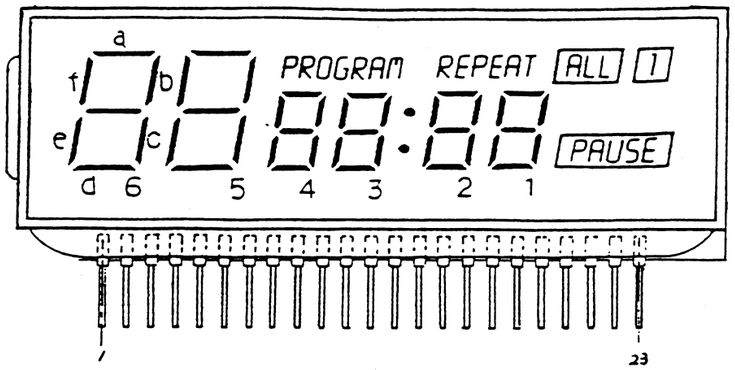
MC-1000/1000L
(CD & Deck Section)

10. EXPLODED VIEW OF DECK MECHANISM



11. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF LCD & ICS

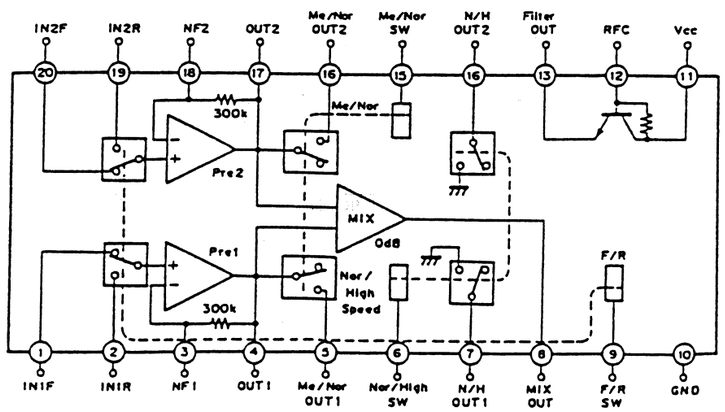
• HLC 9538-01-2111 <LCD Display>



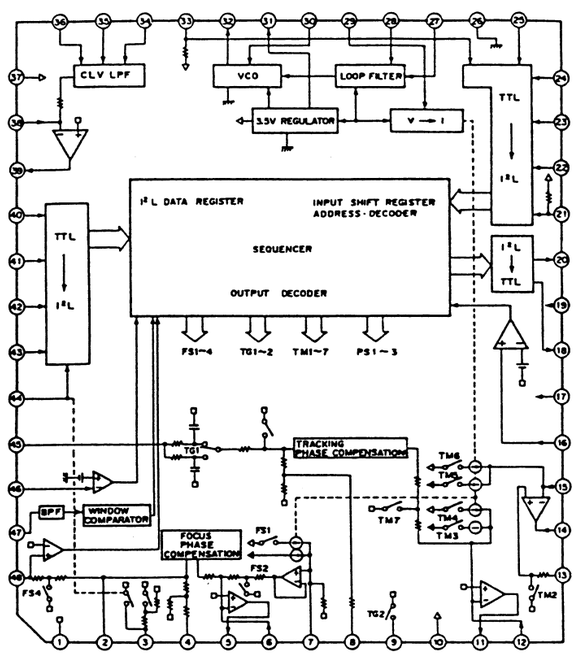
No.	COM. 1	COM. 2	COM. 3
1	COM. 1		
2		COM. 2	
3			COM. 3
4	REPEAT	1	ALL
5	PAUSE		
6		6-e	6-f
7	6-d	6-g	6-a
8	PROGRAM	6-c	6-b
9		5-e	5-f
10	5-d	5-g	5-a
11		5-c	5-b
12		4-e	4-f

No.	COM. 1	COM. 2	COM. 3
13	4-d	4-g	4-a
14		4-c	4-b
15		3-e	3-f
16	3-d	3-g	3-a
17	:	3-c	3-b
18		2-e	2-f
19	2-d	2-g	2-a
20		2-c	2-b
21		1-e	1-f
22	1-d	1-g	1-a
23		1-c	1-b

• CXA1115BP <Play Amp>



• CXA1082BQ <Focus/Tracking Servo>



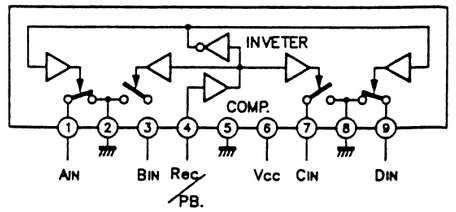
◆ Terminal Function <CXA1082BQ>

Pin No.	Pin Name	I/O	Description
2	FGD	I	A capacitor is connected between this Pin and F3 (Pin 3) for decreasing high-frequency gain of focus servo.
3	FS3	O	Terminal for switching high-frequency gain of focus servo.
4	FLB	—	This Pin is used to connect a time constant for increasing low-frequency characteristic of focus servo.
5	FEO	O	Terminal for outputting a signal for driving focus coil.
11	TAO	O	Terminal for outputting a signal for driving tracking coil.
14	SLD	O	Terminal for outputting a drive signal for sled motor.
39	SPDLO	O	Terminal for outputting a drive signal for spindle (disc) motor.
6	FE ⊖	I	Focus amplifier inverting input.
7	SRCH	I	This terminal is used to determine time constant for genarating focus search wavefoam.
8	TGU TG2		Terminals are used to determine a time constant for switching tracking high-frequency gain.
12	TA ⊖	I	Tracking amplifier inverting input.
13	SL ⊕	I	Sled (Feed) amplifier non-inverting input.
15	SL ⊖	I	Sled amplifier inverting input.
16	SSTOP	I	Terminal for inputting a signal from limit switch ON/OFF for detecting innermost track of disc.
17	FSET	I	Terminal for setting focus and tracking phase-compensation peaks and fo of CLV LPF.
18	SENS	O	Terminal for outputting internal condition data.
20	C.OUT	O	Terminal for outputting a signal for counting track number of disc.
21	DIRC		This terminal is used for one-track jump operation.

<CXA1082BQ>

Pin No.	Pin Name	I/O	Description
22	XRST		Terminal for inputting a reset signal. Reset operation in "L" level.
23	DATA	I	Serial data input from the CXP1001AQ mechanism control.
24	XLT	I	Terminal for inputting a latch signal for serial data from the CXP1001AQ mechanism control.
25	CLK	I	Serial data clock input from the CXP1001AQ mechanism control.
26	DGND	—	Ground.
28	PDI	I	PDO signal input from the phase comparator of the CXD1167Q digital signal processing.
29	ISET	O	Terminal for outputting a current to determine focus search, track jump and sleding kick height.
30	VCOF	I	VCO free-frequency is practically proportional to resistance between this Pin and Pin 31.
32	C864	O	Internal 8.64 MHz VCO output.
34	MDP	I	A spindle motor driving signal input from the CXD1125 digital signal processing (MDP terminal).
35	MON	I	A spindle motor ON/OFF signal input from the CXD1125 digital signal processing (MON terminal).
36	FSW	—	This terminal is used to determine a time constant for LPF of CLV servo error signal.
38	SPDL ⊖	I	Spindle drive amplifier inverting input.
40	WDCK	I	Auto sequence clock input. Typical frequency = 88.2 kHz.
41	FOK	I	FOK signal input from the CXA1081S.
42	MIRR	I	Mirror comparator signal input from the CXA1081S.
44	DFCT	I	Defect comparator signal input from the CXA1081S.
45	TE	I	Tracking error amplifier signal input from CXA1081S.
46	TZC	I	Tracking zero cross comparator signal input.
47	ATSC	I	Window compartor input for ATSC detection.
48	FE	I	Focus error amplifier signal input.

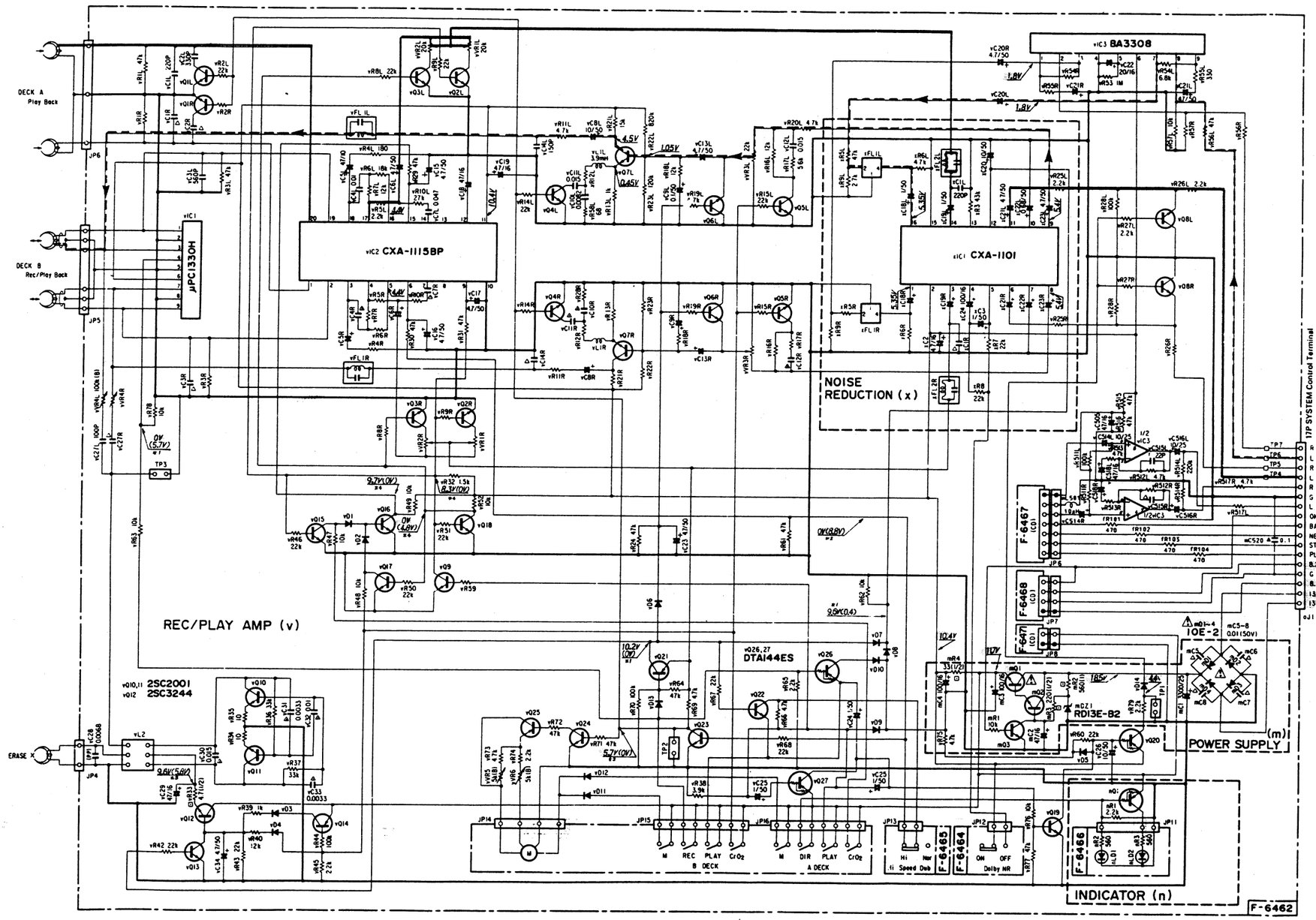
• μPC1330H <Selector>



12. SCHEMATIC DIAGRAM

12-1. DECK SECTION

* Design and specifications subject to changes without noitice for improvements.



SYMBOL OF FUNCTION
(m) POWER SUPPLY
(n) INDICATOR
(v) REC/PLAY AMP
(x) NOISE REDUCTION
(f)

v01~9,12,13,15~19,22~24
2SC2458
v014,21,25
2SA1048
v01~10,13,14
ISS133

RESISTORS
Are in ohms, 1/6 Watts, ±5% Tolerance
Unless Otherwise Noted. k: kΩ, M: MΩ.

CAPACITORS
Are in µF, Unless Otherwise Noted P: pF
ELECTROLYTIC CAPACITORS
Capacitance (µF) / volt (V)

Each D.C Voltage shows the nominal value in volts at stop

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer

SYMBOL
△ Ceramic Capacitor
◎ Mylar
△ Barrier Layer Capacitor
□ Non-Inflammable Resistor

* ( ): REC
* 2 ( ): HIGH SPEED
* 3 ( ): NORMA TAPE(B REC)
* 4 ( ): A PLAY

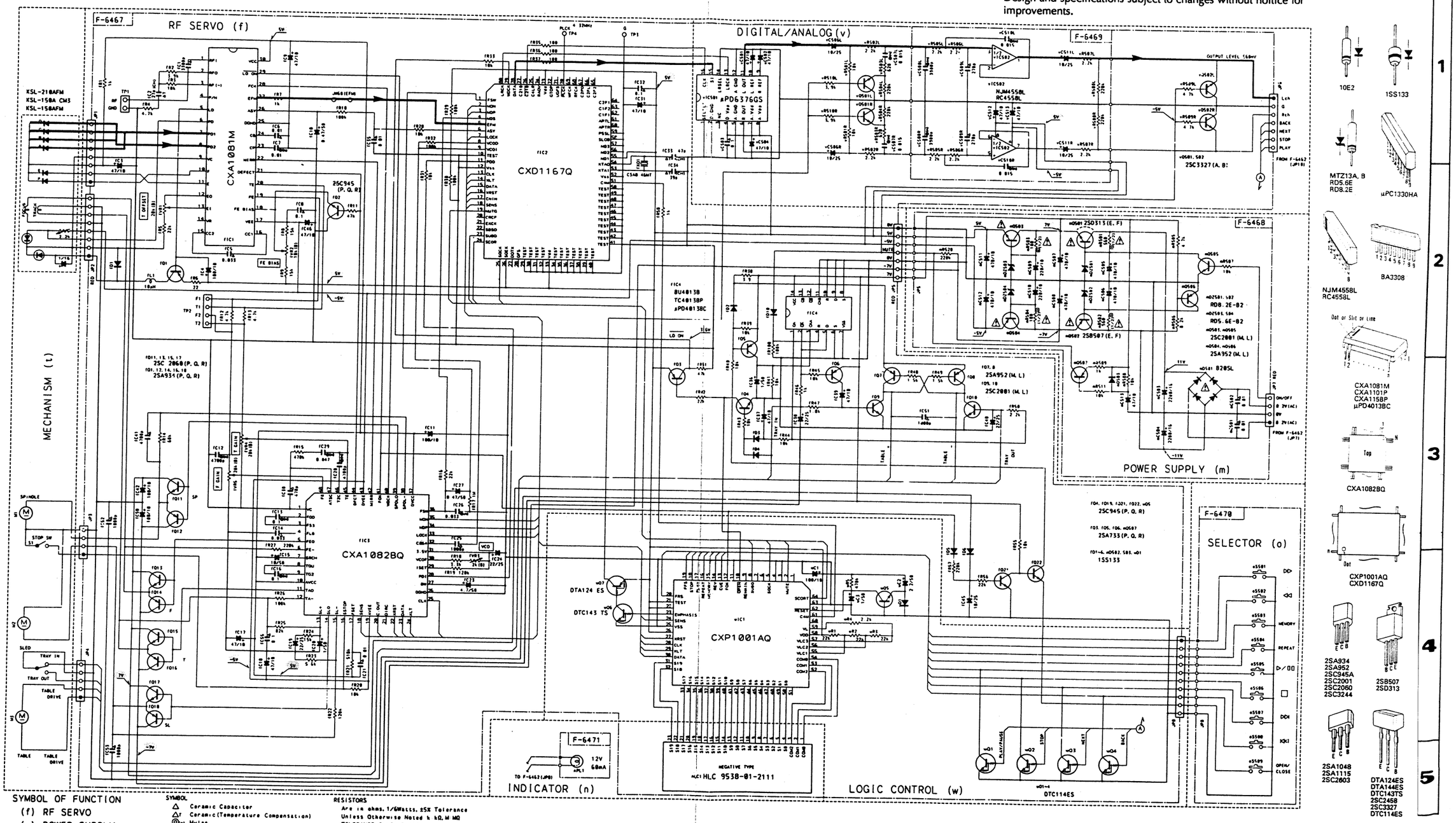
10E2
1SS133
MTZ13A, B
RD5.6E
RD8.2E
µPC1330HA
NJM4558L
RC4558L
BA3308
Dot or Slit or Line
CXA1081M
CXA1101P
CXA1115P
µPD4013C
CXA1082Q
CXP1001Q
CXD1167J
m01
2SD313
m02,3
2SC2458
v020, n01
DTAI44ES
2SA934
2SA952
2SC945A
2SC2001
2SC2060
2SC3244
S8507
SD313
2SA1048
2SA1115
2SC2603
NTA1124ES
NTA1144ES
NTC1143TS
NSC2156
NSC3127
NTC1144ES

PLAY Signal Line
REC Signal Line

MC-1000/1000L (CD & Deck Section)

12-2. CD Section

* Design and specifications subject to changes without noitice for improvements.



SYMBOL OF FUNCTION
- (f) RF SERVO
- (m) POWER SUPPLY
- (n) INDICATOR
- (o) SELECTOR
- (t) MECHANISM
- (v) DIGITAL/ANALOG
- (w) LOGIC CONTROL

SYMBOL
- Ceramic Capacitor
- Ceramic(Temperature Compensation)
- Mylar
- Barrier Layer Capacitor
- Non-Inflammable Resistor

⚠ is Safety Part. Use only replacement parts recommended by the manufacturer.

RESISTORS
Are in ohms. 1/6Watts, ±5% Tolerance
Unless Otherwise Noted k kΩ, M MΩ
TOLERANCE G: ±2% F: ±1%

CAPACITORS
Are in μF. Unless Otherwise Noted p pF

ELECTROLYTIC CAPACITORS
Capacitance(μF)/Volt(V)

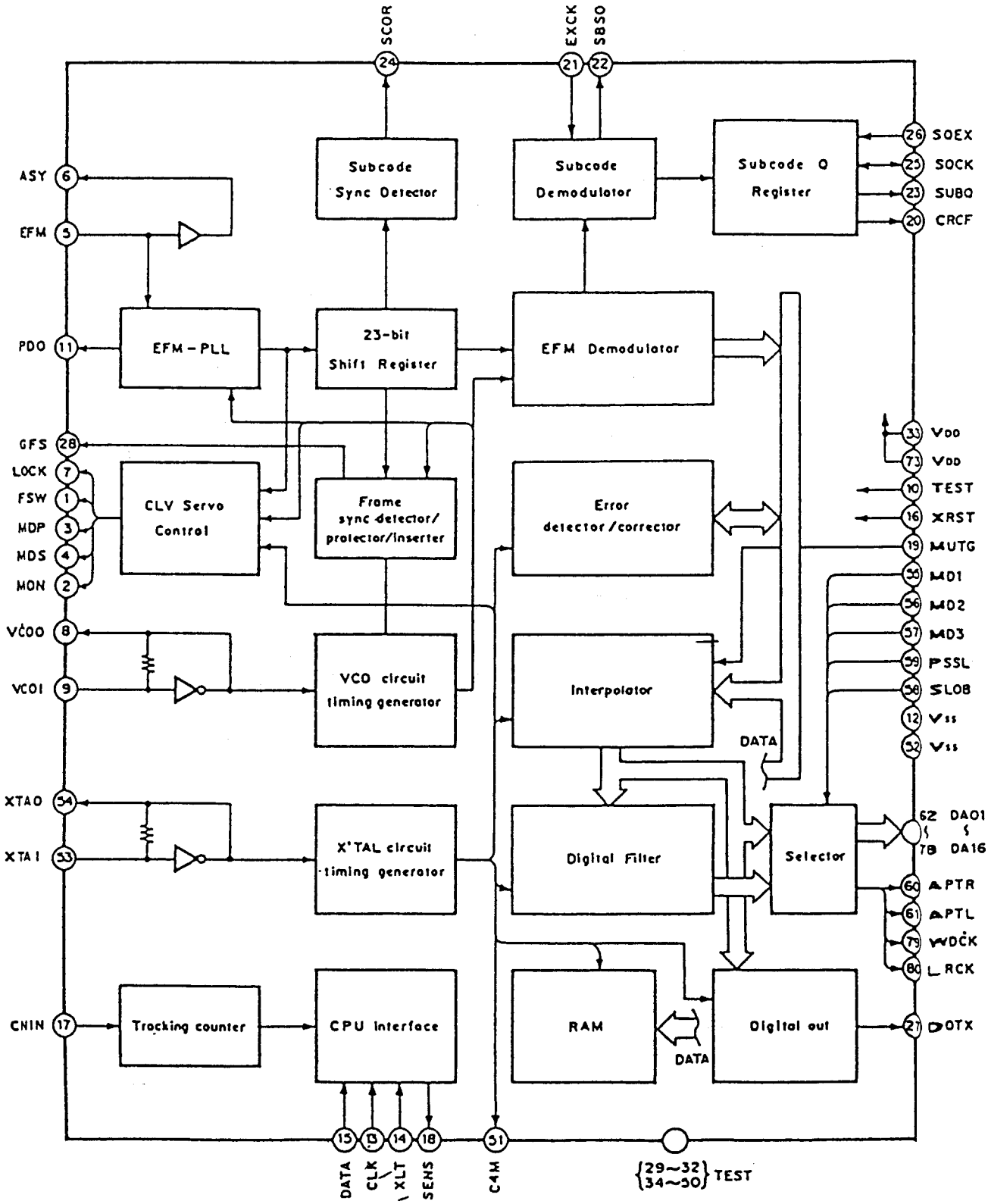
Each D.C.Voltage shows the nominal value in volts at play

——— Signal Line

SANSUI ELECTRIC CO., LTD.: New River Bldg. 10-14, Shinkawa 1-chome, Chuo-ku, Tokyo 104, Japan
PHONE: (03) 5566-1024 / FAX: 03-5566-1027 (International Division)
SANSUI USA INC.: 1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
SANSUI DEUTSCHLAND G.M.B.H.: Paul-Ehrlich-Strasse 8, 6074 Rödermark 2, West Germany
山水電気株式会社 東京都中央区新川1-10-14 (〒104)

(SM2-198) Printed in Japan (1990.09.C) <Stock No. 365541 0>

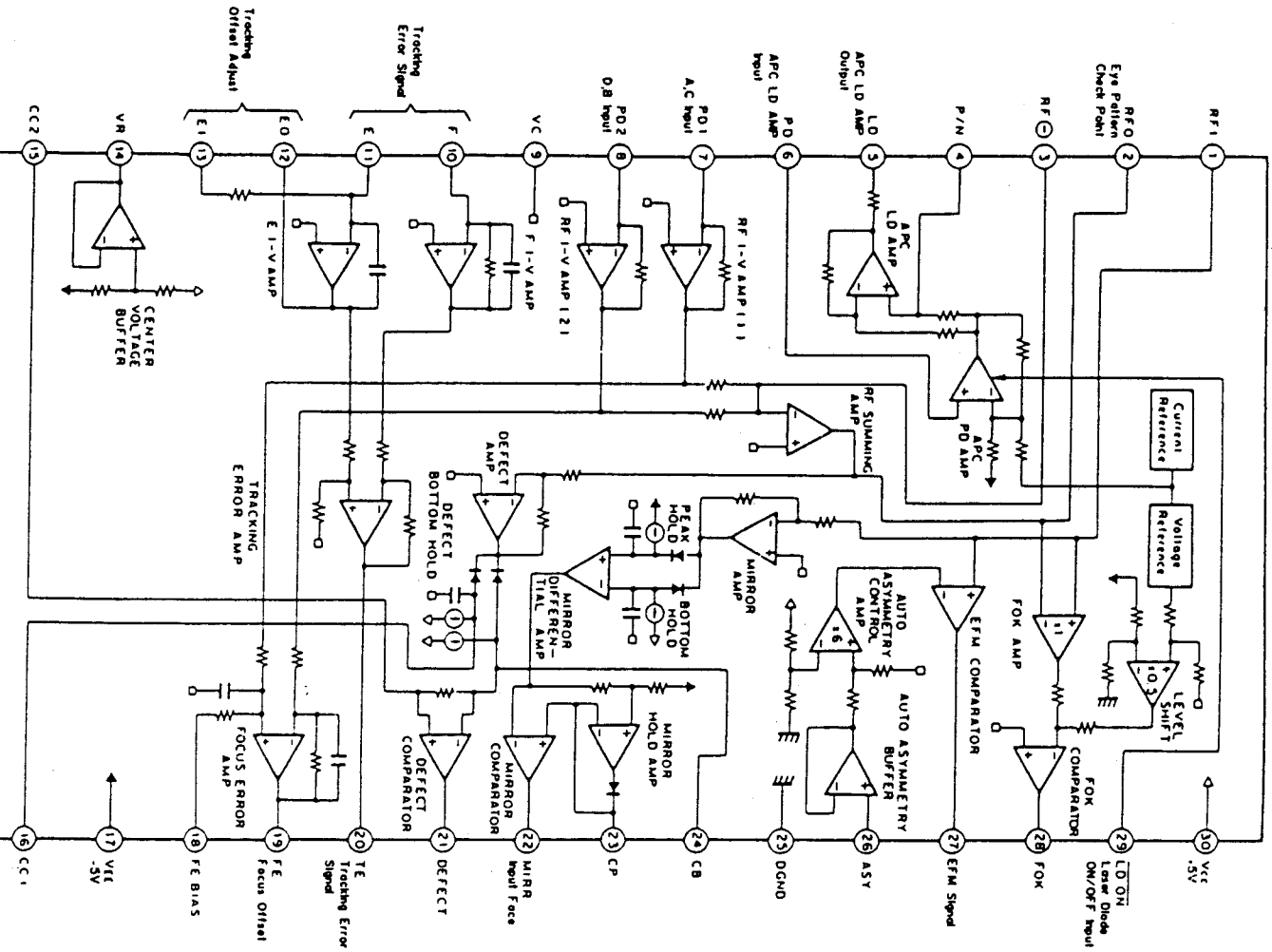
CXD1167Q <Digital Signal Processing>



Terminal Function <CXD-1167Q>

Pin No.	Pin Name	I/O	Function
1	FSW	O	Output to change the time constant of the output filter for the spindle motor
2	MON	O	Output to control ON/OFF of the spindle motor
3	MDP	O	Output to drive the spindle motor. For rough control in the CLV-S mode and phase control in the CLV-P mode.
4	MDS	O	Output to drive the spindle motor. For speed control in the CLV-P mode.
5	EFM	I	EFM signal input from the RF amplifier
6	ASY	O	Output to control the slice level of the EFM signal.
7	LOCK	O	Issues "H" when the GFS signal is "H" by sampling with WFCK/16. If it is "L" consecutively 8 times, "L" is output.
8	VCOO	O	VCO output. f = 8.6436 MHz when locked to the EFM signal. (17.2872 MHz when replayed at the double speed.)
9	VCOI	I	VCO input
10	TEST	I	(0V)
11	PDO	O	Output of phase comparison between the EFM signal and VCO/2
12	Vss	—	GND (0V)
13	CLK	I	Input of clock from CPU to transfer serial data. Data is latched at the rise edge of the clock.
14	XLT	I	Latch input from CPU. The data (serial data from CPU) of the 8 bit shift register is latched to each register.
15	DATA	I	Serial data input from CPU
16	XRST	I	System reset input. "L" activates resetting.
17	CNIN	I	Input of tracking pulse
18	SENS	O	Issues internal status according to the address
19	MUTG	I	Muting input. When ATTM of the internal register A is "L", MUTG is "L", i.e. normal status. "H" activates no-sound status.
20	CRCF	O	Issues the output of CRC check result for the subcode Q.
21	EXCK	I	Clock input for serial output of subcode
22	SBSO	O	Serial output of subcode
23	SUBQ	O	Output of subcode Q
24	SCOR	O	Output of subcode sync S0 + S1
25	SQCK	I/O	Clock to read subcode Q.
26	SQEX	I	SQCK selection input (see the CPU interface for more detail.)
27	DOTX	O	Digital output ($\overline{WFCK}$ is output when DO is OFF.)
28	GFS	O	Output to indicate locked status of frame sync
29~32	TEST	I	Fix to "H" or "L". Don't make it open.
33	VDD	—	Power supply (+ 5V)
34~40	TEST	I	Fix to "H" or "L". Don't make it open.
41~50	TEST	I	Fix to "H" or "L". Don't make it open.
51	C4M	O	Frequency division output of the crystal oscillator. f = 4.2336 MHz (8.4672 MHz when replayed at the double speed.)
52	Vss	—	GND (0V)
53	XTAI	I	Input to the crystal oscillator circuit. f = 8.4672 MHz or 16.9344 MHz by selecting mode. (16.9344 MHz when replaying at the double speed.)
54	XTAO	O	Output to the crystal oscillator circuit. f = 8.4672 MHz or 16.9344 MHz by selecting mode. (16.9344 MHz when replaying at the double speed.)
55	MD1	I	Mode select input 1
56	MD2	I	Mode select input 2
57	MD3	I	Mode select input 3
58	SLOB	I	Input to change the code of audio data output. When it is "L" or "H", 2's compliment output or offset binary output is issued, respectively.
59	PSSL	I	Input to change the mode of audio data output. When it is "L" or "H", serial or parallel output is issued, respectively.
60	APTR	O	Control output to correct aperture. "H" for R-ch.
61	APTL	O	Control output to correct aperture. "H" for L-ch
62	DA01	O	When PSSL = "H", DA01 (LSB of parallel sound data) is output. When PSSL = "L", C1F1 is output.
63	DA02	O	When PSSL = "H" or "L", DA02 or C1F2 is output, respectively.
64	DA03	O	When PSSL = "H" or "L", DA03 or C2F1 is output, respectively.
65	DA04	O	When PSSL = "H" or "L", DA04 or C2F2 is output, respectively.
66	DA05	O	When PSSL = "H" or "L", DA05 or C2FL is output, respectively.
67	DA06	O	When PSSL = "H" or "L", DA06 or C2PO is output, respectively.
68	DA07	O	When PSSL = "H" or "L", DA07 or RFCK is output, respectively.
69	DA08	O	When PSSL = "H" or "L", DA08 or WFCK is output, respectively.
70	DA09	O	When PSSL = "H" or "L", DA09 or $\overline{PLCK}$ is output, respectively.
71	DA10	O	When PSSL = "H" or "L", DA10 or UGFS is output, respectively.
72	DA11	O	When PSSL = "H" or "L", DA11 or GTOP is output, respectively.
73	Vcc	—	Power supply (+ 5V)
74	DA12	O	When PSSL = "H" or "L", DA12 or RAOV is output, respectively.
75	DA13	O	When PSSL = "H" or "L", DA13 or C4LR is output, respectively.
76	DA14	O	When PSSL = "H" or "L", DA14 or BCLK is output, respectively.
77	DA15	O	When PSSL = "H" or "L", DA15 or $\overline{BCLK}$ is output, respectively.
78	DA16	O	When PSSL = "H", DA16 (MSB of parallel sound data) is output. When PSSL = "L", DATA is output.
79	WDCK	O	Strobe signal output. When DF is ON, the frequency is 176.4 kHz (352.8 kHz when replayed at the double speed). When DF is OFF, it is 88.2 kHz (176.4 kHz when replayed at the double speed).
80	LRCK	O	Strobe signal output. When DF is ON, the frequency is 88.2 kHz (176.4 kHz when replayed at the double speed). When DF is OFF, it is 44.1 kHz (88.2 kHz when replayed at the double speed).

CXA1081M <RF Amp.>



Terminal Function <CXA1081M>

No.	Pin Name	I/O	Description
1	RFI	I	RF summing amplifier input.
2	RFO	O	RF summing amplifier input.
3	RF ⊖	I	RF Summing amplifier feedback signal input.
4	P/N	I	Terminal for switching P-sub/N-sub of LD (laser diode).
5	LD	O	APC LD amplifier output.
6	PD	I	APC PD amplifier input.
7	PD1	I	RF I-V amplifier (1) inverting input. This terminal is connected to the pin diode (A + C).
8	PD2	I	RF I-V amplifier (2) inverting input. This terminal is connected to the pin diode (B + D).
9	VC	—	Ground
10	F	I	F I-V amplifier inverting input. This terminal is connected to the pin diode (F).
11	E	I	E I-V amplifier inverting input. This terminal is connected to the pin diode (E).
12	EO	O	E I-V amplifier output.
13	EI	I	E I-V amplifier feedback input.
14	VR	O	(VCC + VEE)/2 voltage output.

Pin No.	Pin Name	I/O	Description
15	CC2	I	Defect amplifier bottom hold input. This terminal is connected Pin 16 with a coupling capacitor.
16	CC1	O	Defect amplifier bottom hold output.
17	VEE	—	Negative supply voltage: −5V.
18	FEBIAS	I	Bias terminal for the focus error amplifier non-inverting.
19	FE	O	Focus error amplifier output.
20	TE	O	Tracking error amplifier output.
21	DEFECT	O	Defect comparator output.
22	MIRR	O	Mirror comparator output.
23	CP	I	Mirror comparator non-inverting input. This terminal is connected a mirror hold capacitor.
24	CB	I	This terminal is connected a defect bottom hold capacitor.
25	DGND	—	Ground.
26	ASY	I	Auto asymmetry buffer control signal input.
27	EFM	O	EFM comparator output.
28	FOK	O	FOK comparator output.
29	$\overline{\text{LD ON}}$	I	Laser diode ON/OFF switching input.
30	VCC	—	Positive supply voltage: +5V.

Terminal Function <CXP1001AQ>

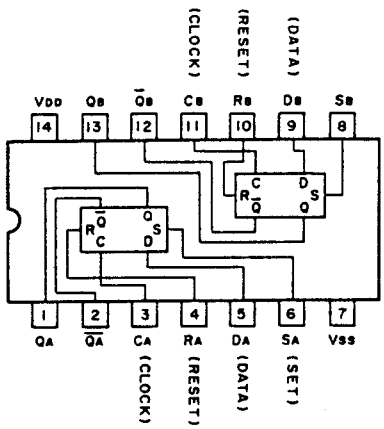
Pin No.	Pin Name	I/O	Function	I/O Format
1	——		OPEN	
2	MUTE	O	MUTE is ON with mute output in "H". It is connected to MUTG ⑲ of CXD 1167.	Output of pull-up resistance
3, 4	——	I	Connected to Vss.	
5	SQCK	O	Output of clock for reading subcode Q. It is connected to SQCK ㉓ of CXD1167.	3-state output
6, 7	——		OPEN	
8	SUBQ	I	Data input of subcode Q. It is connected to SUBQ ㉔ of CXD 1167.	Schmidt Inverter input
9	REMAIN	I	REMAIN (remaining time) indication switching input KEY is connected.	Inverter input
10	OPEN	I	Connect the OPEN/CLOSE detection switch on the lid of the CD player and adjust it to open upon "L".	
11	——		Connected to Vss.	
12	FOK	I	Enter whether focusing is OK. It is connected to FOK ㉘ of CXA1081.	Inverter input
13	CUE	I	Connect ▷▷ KEY.	
14	SEV	I	Connect ◁◁ KEY.	
15	MEMORY	I	Connect MEMORY KEY.	
16	REPEAT	I	Connect REPEAT KEY.	
17	PLAY	I	Connect ▷/⏸ (PLAY/PAUSE) KEY.	
18	STOP	I	Connect ■ (STOP) KEY.	
19	FFS	I	Connect ▷▷| KEY.	
20	FRS	I	Connect |◁◁ KEY.	
21	TEST	I	Enter TEST mode.	
22	——		Connected to VDD.	
23	EMPHASIS	O	Emphasis output. "H" when emphasis is ON. Connected to the analog audio system.	3-state output
24	SENS	I	Sense input (various system monitor) terminal. Connected to SENS ⑱ of CXD1167 and ⑱ of CXA1082.	Inverter input

Pin No.	Pin Name	I/O	Function	I/O Format
25	Vss		Vss terminal	
26	——	I	Connected to VDD.	
27	XRST	O	System reset output. Connected to XRST ⑯ of CXD1167 and ㉒ of CXA1082.	3-state output
28	CLK	O	System control clock output. Connected to CLK ⑬ of CXD1167 and ㉕ of CXA1082.	
29	XLT	O	System control latch output. Connected to XLT ⑭ of CXD1167 and ㉖ of CXA1082	
30	DATA	O	System control data output. Connected to DATA ⑮ of CXD1167 and ㉗ of CXA1082.	
31 〳 50	SEG19 〳 SEG0	O	For the drive output (segment) indication pattern of the liquid crystal display (LCD), see the attached sheet.	Segment output
51	——		OPEN	
52 〳 54	COM2 〳 COM0	O	For the drive output (common) indication pattern of the LCD, see the attached sheet.	Segment output
55 〳 57	VLC1 〳 VLC3		Terminal to supply bias voltage for the LCD	
58	VDD		VDD terminal	
59	VL		Terminal to supply bias voltage for the LCD	
60	——		OPEN	
61	C4M	I	4.2336 MHz clock input terminal. Connected to ⑤① C4M of CXD1167.	Clock input
62	$\overline{\text{RESET}}$	I	Reset input	Reset
63	——		Connected to Vss.	
64	SCOR	I	Subcode sync (SCOR) input. Connected to SCOR ㉔ of CXD1160.	Schmidt inverter input

Terr

Pin

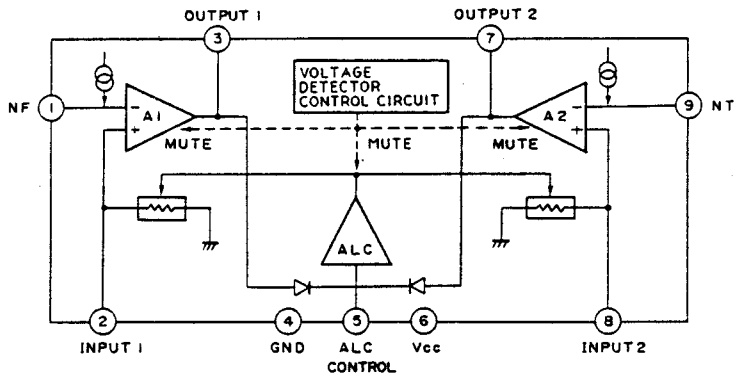
• μPD4013BC/TC4013BP/MB84013BM <Dual D Type Flip-Flop>



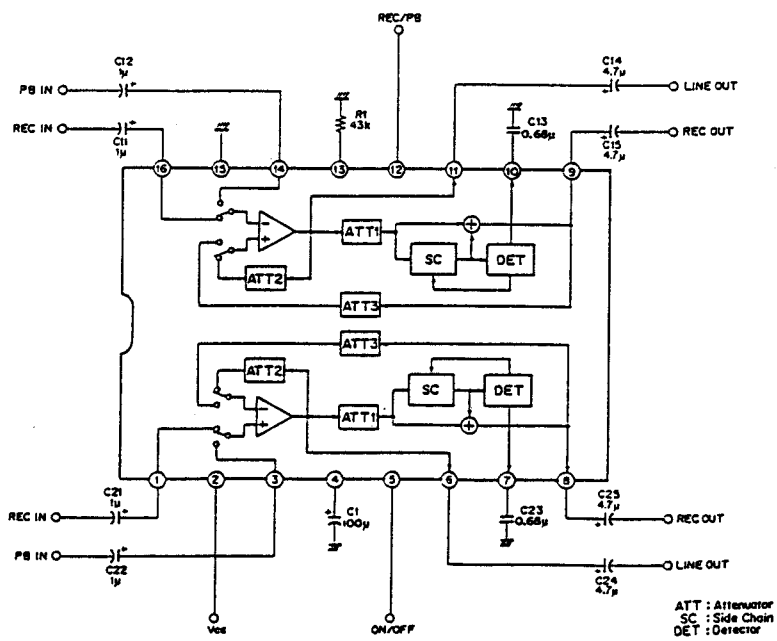
INPUTS				OUTPUT	
CLOCK	DATA	SET	RESET	Qn+1	$\overline{Qn+1}$
↑	L	L	L	L	H
↑	H	L	L	H	L
↓	X	L	L	Qn	$\overline{Qn}$
X	X	L	H	L	H
X	X	H	L	H	L
X	X	H	H	L	L

H: High Level Qn : Present State
L: Low Level Qn+1: Next State
X: Don't Care

• BA3308 <Pre-Amp.>



• CXA1101P <Dolby Noise Reduction>



• μPD6376GS <D/A Converter>